USDA United States Department of Agriculture

Natural Resources Conservation Service

Washington Basin Outlook Report May 1, 1998

Basin Outlook Reports
and
Federal - State - Private
Cooperative Snow Surveys

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How forecasts are made

Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual snow courses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in computerized statistical and simulation models to prepare runoff forecasts. These forecasts are coordinated between hydrologists in the Natural Resources Conservation Service and the National Weather Service. Unless otherwise specified, all forecasts are for flows that would occur naturally without any upstream influences.

Forecasts of any kind, of course, are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertain knowledge of future weather conditions, (2) uncertainty in the forecasting procedure, and (3) errors in the data. The forecast, therefore, must be interpreted not as a single value but rather as a range of values with specific probabilities of occurrence. The middle of the range is expressed by the 50% exceedance probability forecast, for which there is a 50% chance that the actual flow will be above, and a 50% chance that the actual flow will be below, this value. To describe the expected range around this 50% value, four other forecasts are provided, two smaller values (90% and 70% exceedance probability) and two larger values (30%, and 10% exceedance probability). For example, there is a 90% chance that the actual flow will be more than the 90% exceedance probability forecast. The others can be interpreted similarly.

The wider the spread among these values, the more uncertain the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast. Users should take this uncertainty into consideration when making operational decisions by selecting forecasts corresponding to the level of risk they are willing to assume about the amount of water to be expected. If users anticipate receiving a lesser supply of water, or if they wish to increase their chances of having an adequate supply of water for their operations, they may want to base their decisions on the 90% or 70% exceedance probability forecasts, or something in between. On the other hand, if users are concerned about receiving too much water (for example, threat of flooding), they may want to base their decisions on the 30% or 10% exceedance probability forecasts, or something in between. Regardless of the forecast value users choose for operations, they should be prepared to deal with either more or less water. (Users should remember that even if the 90% exceedance probability forecast is used, there is still a 10% chance of receiving less than this amount.) By using the exceedance probability information, users can easily determine the chances of receiving more or less water.

Washington
Water Supply Outlook

May 1998

General Outlook

Predictably, snowpack levels dropped dramatically over most of the state. Above average temperatures and below average precipitation was the basic theme for the month. Streamflow forecasts for some Washington streams took another dive however a select few actually increased. April streamflows varied across the state, but on average were near normal. Reservoir storage varied greatly from basin to basin. Temperatures for the month were 1 to 3 degrees above normal.

Snowpack

The May 1 statewide SNOTEL readings showed 102% of average snowpack. By May 4 the average had dropped to 91%, due to unseasonably high temperatures. Snowpack varied from 28% of average in the Tolt River Basin to as high as 436% in the Conconully Lake Basin. Westside averages, from SNOTEL and May 1 snow surveys, included the North Puget Sound river basins with 78% of average, the Olympic Peninsula basins with 104%, and the Lewis-Cowlitz basins with 117% of average. Snowpack along the east slopes of the Cascade Mountains included the Yakima area with 124% of average, and the Wenatchee area with 161%. Snowpack in the Spokane River Basin remained below average at 50%, and the Pend Oreille River Basin (including Canadian data) retained only 65% of average snowpack. Maximum snow cover in the state was at Paradise SNOTEL near Mount Rainier. It had a water content of 70 inches. This site would normally have 61.8 inches of water content on May 1. The highest average in the state was Salmon Meadows SNOTEL in the Conconully Lake Basin with 436% of average.

BASIN	PERCENT OF LAST YEAR	PERCENT OF AVERAGE
Spokane	32	50
Newman Lake	34	52
Colville	N/A	N/A
Pend Oreille	40	65
Okanogan	60	82
Similkameen	44	57
Methow	62	95
Chelan	63	100
Wenatchee	48	90
Stemilt Creek	58	144
Yakima	54	106
Ahtanum Creek	74	143
Walla Walla	30	66
Cowlitz	64	106
Lewis	56	129
White	76	123
Green	34	78
Cedar	24	48
Snoqualmie	41	78
Skykomish	32	65
Skagit	56	85
Baker	70	93
Nooksack	42	56
Olympic Peninsula	98	104

Precipitation

During the month of April, the National Weather Service and Natural Resources Conservation Service climate stations showed considerable variations in precipitation across Washington. The highest percent of average in the state was at Winthrop and Mazama, both in the Methow River Valley. Both climate stations reported 194% of average for a total of 1.49 and 1.96 inches respectfully. The April average for Winthrop was 0.77 inches and for Mazama it was 1.01 inches. Averages for the water year varied from 110% of average on the Olympic Peninsula to 80% in the Walla Walla River Basin. The highest individual site average for the water year was 160% of average at Trough SNOTEL site near Wenatchee.

RIVER BASIN	APRIL PERCENT OF AVERAGE	WATER YEAR PERCENT OF AVERAGE
Spokane	61	83
Colville-Pend Oreille	59	90
Okanogan-Methow	93	105
Wenatchee-Chelan	64	104
Yakima	58	102
Walla Walla	63	80
Cowlitz-Lewis	50	105
White-Green	50	93
Central Puget Sound	47	92
North Puget Sound	47	90
Olympic Peninsula	65	110

Reservoir

Storage levels are beginning to stabilize with the start of spring runoff and the irrigation season. However managers are still trying to balance anticipated spring runoff with summer usage and carry-over requirements. Reservoir storage in the Yakima Basin was 958,400 acre feet, or 122% of average. Storage at other reservoirs included the Okanogan reservoirs with 149% of average for May 1. Storage levels at Roosevelt and Banks Lakes was not available at publication time. The power generation reservoirs included the following: Coeur d'Alene Lake, 181,500 acre feet, or 74% of average and 76% of capacity; Chelan Lake, 312,800 acre feet, 70% of average and 46% of capacity; and the Skagit River reservoirs at 112% of average and 51% of capacity.

BASIN	PERCENT OF CAPACITY	PERCENT OF AVERAGE
Spokane	76	74
Colville-Pend Oreille	N/A	N/A
Okanogan-Methow	101	149
Wenatchee-Chelan	46	70
Yakima	90	122
North Puget Sound	51	112

For more information contact your local Natural Resources Conservation Service office.

Streamflow

Early season snow melt has brought forecasts for many Washington streams down even further this month. A few select streams are forecast slightly higher. Forecasts varied from 122% of average for Salmon Creek near Conconully, to 50% of average for the Spokane River near Post Falls. May forecasts for some Western Washington streams include: Cedar River near Cedar Falls, 77% of average; Green River, 68%; and the Dungeness River, 97%. Some Eastern Washington streams include the Yakima River near Parker, 88% of average; the Wenatchee River at Plain, 93%; and the Colville River at Kettle Falls, 93%. Volumetric forecasts are developed using current, historic, and average snowpack, precipitation and streamflow data collected and coordinated by organizations cooperating with NRCS. A beneficial fact sheet, "Interpreting Streamflow Forecasts," is available on the World Wide Web at http://www.wcc.nrcs.usda.gov/factpub/factpub.html

BASIN	PERCENT OF AVERAGE MOST PROBABLE FORECAST (50 PERCENT CHANCE OF EXCEEDENCE)
Spokane	50-57
Colville-Pend Oreille	59-105
Okanogan-Methow	73-122
Wenatchee-Chelan	93-101
Yakima	85-111
Walla Walla	77-93
Cowlitz-Lewis	89-96
Green River	68
Central Puget Sound	73-90
North Puget Sound	85-90
Olympic Peninsula	94-97

Streamflows reported for April continued to vary from well above to well below average. The Kettle River at Laurier, had the highest flows at 172% of average; and the Cowlitz River below Mayfield Dam, with 67% of average, had the lowest flows in the state. Other streamflows were the following percentage of average: the Priest River, 109%; the Columbia at the International Boundary, 110%; the Spokane River at Spokane, 74%; the Columbia below Rock Island Dam, 101%; the Cle Elum River near Roslyn, 98%; and the Snake River below Ice Harbor Dam, 95%.

STREAM	PERCENT OF AVERAGE APRIL STREAMFLOWS
Pend Oreille Below Box Canyon	98
Kettle at Laurier	172
Columbia at Birchbank	110
Spokane at Long Lake	79
Similkameen at Nighthawk	81
Okanogan at Tonasket	125
Methow at Pateros	133
Chelan at Chelan	108
Wenatchee at Pashastin	100
Yakima at Cle Elum	91
Yakima at Parker	100
Naches at Naches	111
Yakima at Kiona	103
Grande Ronde at Troy	77
Snake below Lower Granite Dam	100
SF Walla Walla near Milton Freewater	115
Columbia at The Dalles	101
Lewis at Ariel	68
Cowlitz below Mayfield Dam	67
Skagit at Concrete	79

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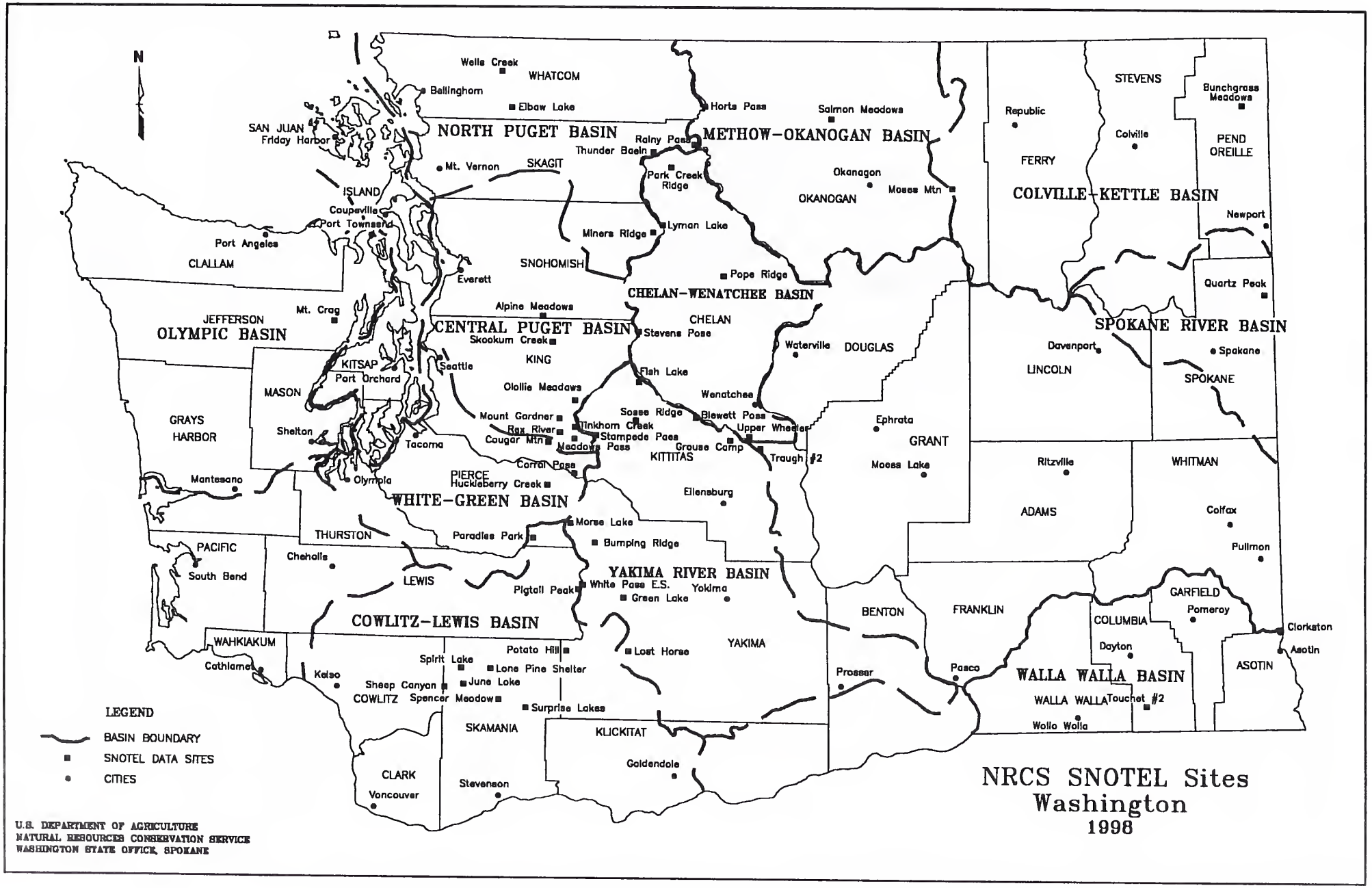
BASIN SUMMARY OF SNOW COURSE DATA

MAY 1998

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1961-90
ALPINE MEADOWS PILL	3500	5/01/98	---	47.2S	72.6	--
AMBROSE	6480	4/28/98	22	9.4	22.4	12.1
ASHLEY DIVIDE	4820	4/28/98	0	.0	7.8	1.0
BADGER PASS PILLOW	6900	5/01/98	---	20.6	49.1	37.8
BAREE CREEK	5500	4/28/98	64	31.2	61.8	43.0
BAREE MIDWAY	4600	4/28/98	46	20.8	53.0	29.4
BAREE TRAIL	3800	4/28/98	0	.0	13.8	1.3
BARKER LAKES PILLOW	8250	5/01/98	---	12.7	23.8	16.0
BASIN CREEK PILLOW	7180	2/01/98	---	12.2	14.2	10.0
BASSOO PEAK	5150	4/28/98	0	.0	11.4	5.7
BEAVER CREEK TRAIL	2200	4/30/98	0	.0	16.8	4.1
BEAVER PASS	3680	4/30/98	47	22.4	42.3	28.1
BERNE-MILL CREEK (d)	3170	5/01/98	44	20.1	38.3	20.8
BIG CREEK	6750	4/27/98	95	36.8	70.1	49.8
BLACK MOUNTAIN	7750	4/29/98	46	16.6	23.2	17.8
BLACK PINE PILLOW	7100	5/01/98	---	7.2	18.5	12.0
BLEWETT PASS#2PILLOW	4270	5/01/98	---	.5S	15.4	4.9
BLUE LAKE	5900	5/01/98	18	7.9	32.8	23.9
BROWN TOP AM	6000	4/30/98	114	53.8	77.4	61.7
BRUSH CREEK TIMBER	5000	4/28/98	0	.0	6.8	6.0
BULL MOUNTAIN	6600	4/30/98	0	.0	11.4	3.1
BUMPING LAKE	3450	4/29/98	18	8.1	--	7.5
BUMPING LAKE (NEW)	3400	4/29/98	18	8.1	26.8	10.9
BUMPING RIDGE PILLOW	4600	5/01/98	---	25.6S	48.9	18.9
BUNCHGRASS MDWPILLOW	5000	5/01/98	---	25.2	48.2	26.9
CAYUSE PASS	5300	5/01/98	---	96.0E	113.5	88.1
CHESSMAN RESERVOIR	6200	4/29/98	0	.0	1.0	2.4
CHICKEN CREEK	4060	4/27/98	0	.0	19.9	3.6
CHIWAUKUM G.S.	2500	5/01/98	0	.0	--	1.0
COMBINATION PILLOW	5600	5/01/98	---	.0	4.1	3.2
COPPER BOTTOM PILLOW	5200	5/01/98	---	.0	13.0	8.1
COPPER MOUNTAIN	7700	4/28/98	32	10.8	17.8	10.6
CORRAL PASS PILLOW	6000	5/01/98	---	35.1S	59.5	29.5
COTTONWOOD CREEK	6400	4/29/98	23	8.5	12.6	7.6
COUGAR MTN. PILLOW	3200	5/01/98	---	.6S	30.2	9.3
COX VALLEY	4500	4/26/98	82	37.9	49.0	39.1
COYOTE HILL	4200	4/29/98	0	.0	12.1	3.0
DALY CREEK PILLOW	5780	5/01/98	---	6.5	16.6	5.8
DEER PARK	5200	4/28/98	39	17.5	13.7	18.7
DEVILS PARK	5900	4/28/98	76	35.7	59.4	45.0
DISCOVERY BASIN	7050	4/30/98	29	11.2	17.9	10.0
DIX HILL	6400	5/03/98	0	.0	8.5	4.4
DOMMERIE FLATS	2200	4/29/98	0	.0	.0	--
EAST FORK R.S.	5400	4/25/98	0	.0	5.6	.9
EAST RAGGED SADDLE	3740	5/03/98	0	.0	24.0	--
EASY PASS AM	5200	5/01/98	---	93.0E	132.0	85.4
ELBOW LAKE PILLOW	3200	5/01/98	---	15.7S	49.1	27.8
EMERY CREEK PILLOW	4350	5/01/98	---	.3	18.1	8.5
FATTY CREEK	5500	4/27/98	44	16.8	41.3	23.6
FISH CREEK	8000	4/24/98	49	14.7	17.2	12.4
FISH LAKE	3370	4/28/98	46	19.6	45.6	22.4
FISH LAKE PILLOW	3370	5/01/98	---	17.9S	49.0	25.0
FLATTOP MTN PILLOW	6300	5/01/98	---	36.0	66.9	48.4
FLEECER RIDGE	7500	5/01/98	19	6.2	21.4	8.4
FOURTH OF JULY SUM	3200	5/01/98	0	.0	.0	.0
FREEZEOUT CK. TRAIL	3500	4/28/98	7	3.9	13.7	7.0
FROHNER MDWS PILLOW	6480	5/01/98	---	5.2	10.4	7.1
GRASS MOUNTAIN #2	2900	5/02/98	0	.0	.0	2.3
GRAVE CRK PILLOW	4300	5/01/98	---	2.4	17.3	9.0
GREEN LAKE PILLOW	6000	5/01/98	---	23.8S	33.9	19.7
GRIFFIN CR DIVIDE	5150	4/28/98	0	.0	13.6	6.3
GROUSE CAMP PILLOW	5380	5/01/98	---	12.0S	22.2	9.2
HAND CREEK PILLOW	5030	5/01/98	---	.0	14.6	8.3
HARTS PASS PILLOW	6500	5/01/98	---	42.4S	59.6	42.0
HELL ROARING DIVIDE	5770	4/30/98	46	19.6	42.1	30.1
HERRIG JUNCTION	4850	4/27/98	38	17.0	37.3	23.2
HIGH RIDGE PILLOW	4980	5/01/98	---	7.8S	31.6	12.4
HOLBROOK	4530	5/01/98	0	.0	9.9	1.7
HOODOO BASIN PILLOW	6050	5/01/98	---	31.5	76.7	47.2
HUMBOLDT GLCH PILLOW	4250	5/01/98	---	1.5	4.4	8.9
HURRICANE	4500	4/27/98	35	15.2	23.6	21.9
INTERGAARD	6450	4/29/98	19	7.4	13.0	7.2
JUNE LAKE PILLOW	3200	5/01/98	---	21.6S	49.6	19.6
KRAFT CREEK PILLOW	4750	5/01/98	---	.0	22.3	5.8
LESTER CREEK	3100	5/02/98	30	13.1	35.6	15.0
LOGAN CREEK	4300	4/28/98	0	.0	7.3	2.2
LOLO PASS PILLOW	5240	5/01/98	---	14.0	55.0	27.5
LONE PINE PILLOW	3800	5/01/98	---	35.3S	60.1	26.4
LOOKOUT PILLOW	5140	5/01/98	---	18.7	47.8	29.3
LOST HORSE PILLOW	5000	5/01/98	---	16.2S	20.5	8.2
LOST LAKE PILLOW	6110	5/01/98	---	38.2	102.6	63.0
LOWER SANDS CREEK #2	3120	5/04/98	19	8.7	35.4	16.7
LUBRECHT FOREST NO 3	5450	5/01/98	0	.0	6.6	3.0
LUBRECHT PILLOW	4680	5/01/98	---	.0	.0	1.7
LYMAN LAKE PILLOW	5900	5/01/98	---	68.5S	86.9	58.7
LYNN LAKE	4000	5/02/98	17	8.0	28.8	10.7
MARIAS PASS	5250	5/04/98	7	3.2	27.0	14.4
MARTEN LAKE AM	3600	4/21/98	133	64.2	88.0	75.8
MEADOWS CABIN	1900	4/29/98	0	.0	4.5	1.1
MEADOWS PASS PILLOW	3240	5/01/98	---	4.9S	35.0	21.0
MERRITT	2140	5/01/98	0	.0	--	3.6
MICA CREEK PILLOW	4750	5/01/98	---	6.5	40.4	--
MINERAL CREEK	4000	5/02/98	6	3.8	24.4	11.2
MOOSE CREEK PILLOW	6200	5/01/98	---	10.5	30.1	14.6
MORRISSEY RIDGE CAN.	6100	5/01/98	---	18.1	41.8	28.7
MORSE LAKE PILLOW	5400	5/01/98	---	68.3S	89.7	44.4
MOSES MTN PILLOW	4800	5/01/98	---	12.2S	13.7	7.3
MOSQUITO RDG PILLOW	5200	5/01/98	---	20.6	58.1	34.7
MOULTON RESERVOIR	6850	4/24/98	0	.0	11.2	3.2
MOUNT CRAG PILLOW	4050	5/01/98	---	35.2S	28.4	22.4
MT. GARDNER PILLOW	2860	5/01/98	---	.0S	18.8	10.8
N.F. ELK CR PILLOW	6250	5/01/98	---	4.9	16.4	9.6
NEVADA CREEK PILLOW	6480	5/01/98	---	9.4	22.2	12.5
NEW HOZOMEEN LAKE	2800	4/28/98	0	.0	13.2	4.5
NEZ PERCE CMP PILLOW	5650	5/01/98	---	8.0	21.4	11.7
NEZ PERCE PASS	6570	4/28/98	28	12.4	22.6	15.6
NOISY BASIN PILLOW	6040	5/01/98	---	34.7	72.8	44.0
NORTH FORK JOCKO	6330	4/27/98	66	29.8	66.0	44.6
OLALLIE MDWS PILLOW	3960	5/01/98	---	49.9S	97.9	51.0
OLALLIE MEADOWS	3630	5/01/98	---	58.1E	--	43.5
OPHIR PARK	7150	5/03/98	18	6.2	22.2	17.4
PARADISE PARK PILLOW	5500	5/01/98	---	70.0S	120.0	61.8
PARK CK RIDGE PILLOW	4600	5/01/98	---	33.4S	69.6	33.6
PETERSON MDW PILLOW	7200	4/30/98	---	12.2	17.6	11.3
PIGTAIL PEAK PILLOW	5900	5/01/98	---	50.4S	101.9	47.7
PIKE CREEK PILLOW	5930	5/01/98	---	12.1	40.2	27.8
PIPESTONE PASS	7200	4/29/98	21	7.4	10.0	5.0
POPE RIDGE PILLOW	3540	5/01/98	---	9.7S	23.5	1.6
POTATO HILL PILLOW	4500	5/01/98	---	19.0S	34.9	17.0
QUARTZ PEAK PILLOW	4700	5/01/98	---	9.7	28.4	18.6
ROUND TOP MTN	4020	4/29/98	0	.0	.0	--
RAGGED RIDGE	3330	4/29/98	0	.0	.0	--
RAINY PASS PILLOW	4780	5/01/98	---	29.0S	54.7	36.8
REX RIVER PILLOW	1900	5/01/98	---	14.2S	43.7	23.1
ROCKER PEAK PILLOW	8000	5/01/98	---	15.1	20.6	17.7
SADDLE MTN PILLOW	7900	5/01/98	---	22.6	42.9	27.6
SALMON MDWS PILLOW	4500	5/01/98	---	4.8S	9.0	1.1
SASSE RIDGE PILLOW	4200	5/01/98	---	29.5S	59.4	24.1
SAVAGE PASS PILLOW	6170	5/01/98	---	17.8	43.8	26.7
SAWMILL RIDGE	4700	5/02/98	56	25.8	64.4	28.2
SCHREIBERS MDW AM	3400	5/01/98	---	48.0E	74.0	56.2
SHEEP CANYON PILLOW	4050	5/01/98	---	29.7S	34.7	34.7
SKALKAHO PILLOW	7260	5/01/98	---	21.6	42.6	26.2
SKITWISH RIDGE	5110	5/05/98	23	11.2	48.7	30.3
SKOOKUM CREEK PILLOW	3920	5/01/98	---	7.5S	41.1	26.4
SLIDE ROCK MOUNTAIN	7100	4/25/98	39	13.6	24.6	17.2
SPENCER MDW PILLOW	3400	5/01/98	---	25.5S	46.1	17.2
SPIRIT LAKE PILLOW	3100	5/01/98	---	.0S	.0	.3
SPOTTED BEAR MTN.	7000	5/01/98	0	.0	17.1	9.6
STAHL PEAK PILLOW	6030	5/01/98	---	33.2	51.9	36.5
STAMPEDE PASS PILLOW	3860	5/01/98	---	33.8S	83.5	39.1
STEMPLE PASS	6600	4/29/98	10	3.2	14.8	10.3
STEVENS PASS PILLOW	4070	5/01/98	---	22.1S	65.9	32.1
STEVENS PASS SAND SD	3700	5/01/98	37	17.2	58.0	28.7
STORM LAKE	7780	4/30/98	45	15.0	22.4	15.0
STRYKER BASIN	6180	4/27/98	70	29.7	47.2	35.8
STUART MOUNTAIN	7400	4/27/98	67	27.6	53.6	32.3
SUNSET PILLOW	5540	5/01/98	---	11.7	48.1	36.5
SURPRISE LKS PILLOW	4250	5/01/98	---	45.3S	74.2	36.1
TEN MILE LOWER	6600	4/29/98	6	1.9	7.2	5.4
TEN MILE MIDDLE	6800	4/29/98	25	8.2	14.8	12.4
THUNDER BASIN	4200	4/29/98	40	16.0	35.8	21.8
TINKHAM CREEK PILLOW	3000	5/01/98	---	15.0S	47.4	16.7
TOUCHET #2 PILLOW	5530	5/01/98	---	18.3	56.6	27.3
TRAPPING CK UP CAN.	4100	5/03/98	0	.0	4.6	.3
TRINKUS LAKE	6100	5/01/98	57	27.4	69.6	43.1
TROUGE #2 PILLOW	5310	5/01/98	---	7.8S	6.7	2.5
TRUMAN CREEK	4060	4/28/98	0	.0	2.3	.6
TUNNEL AVENUE	2450	4/29/98	15	6.0	32.1	12.7
TV MOUNTAIN	6800	4/27/98	37	13.4	31.6	18.7
TWELVEMILE PILLOW	5600	5/01/98	---	.2	26.4	12.4
TWIN CAMP	4100	5/02/98	30	12.1	38.6	--
TWIN CREEKS	3580	5/01/98	0	.0	13.0	1.8
TWIN LAKES PILLOW	6400	5/01/98	---	29.3	69.4	39.8
TWIN SPIRIT DIVIDE	3480	5/03/98	0	.0	15.1	--
UPPER HOLLAND LAKE	6200	5/01/98	53	24.8	52.8	35.2
UPPER WHEELER PILLOW	4400	5/01/98	---	6.9S	12.0	4.8
WARM SPRINGS PILLOW	7800	5/01/98	---	21.2	36.7	24.9
WATSON LAKES AM	4500	5/01/98	---	59.0E	81.0	67.2
WEASEL DIVIDE	5450	5/01/98	49	22.2	47.3	33.6
WELLS CREEK PILLOW	4200	5/01/98	---	21.0S	39.2	37.8
WHITE PASS ES PILLOW	4500	5/01/98	---	18.2S	40.2	18.7

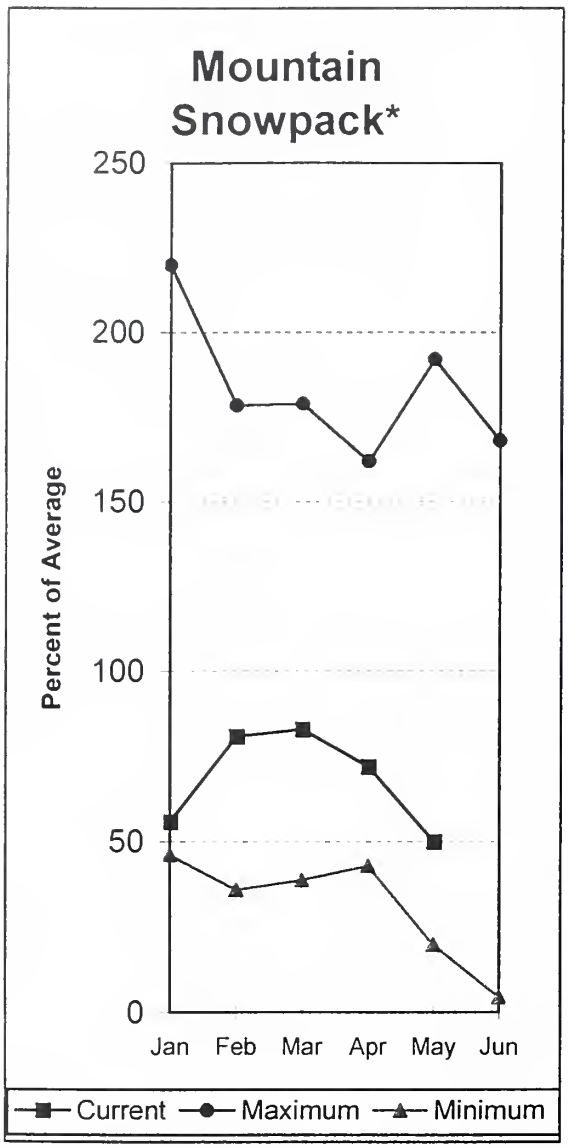
(d) Denotes discontinued site.

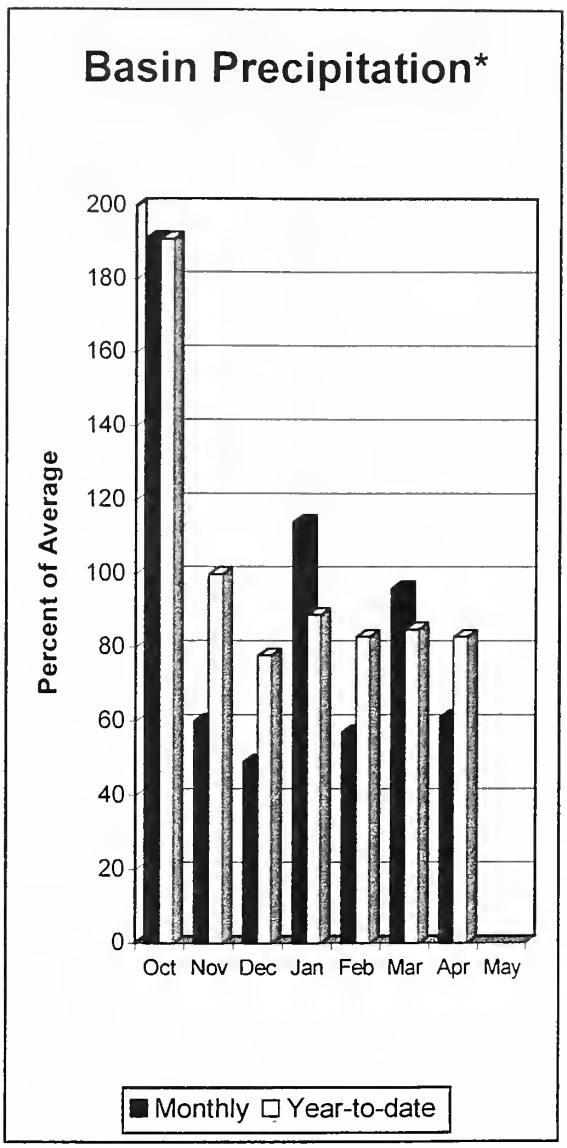


NRCS SNOTEL Sites
Washington
1998

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
WASHINGTON STATE OFFICE, SPOKANE

Spokane River Basin





*Based on selected stations

The May 1 forecasts for summer runoff within the Spokane River Basin are 50% of average near Post Falls and 57% of average at Long Lake. These forecasts dropped about 10% from last month. The forecast is based on a basin snowpack that is 50% of average and precipitation that is 83% of average for the water year. Precipitation for April was much below normal at 61% of average. Streamflow on the Spokane River at Long Lake, was 79% of average for April. May 1 storage in Coeur d'Alene Lake, was 181,500 acre feet, 74% of average, and 76% of capacity. Snowpack at Quartz Peak SNOTEL site contained 9.7 inches of water, compared to the average May 1 reading of 18.6 inches. Average temperatures in the Spokane Basin were 2 degrees above normal.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - May 1, 1998

SPOKANE near Post Falls (2)	MAY-SEP	548	769	919	50	1069	1290	1846
	MAY-JUL	486	703	851	49	999	1216	1749
SPOKANE at Long Lake	MAY-JUL	691	918	1073	54	1228	1455	1975
	MAY-SEP	859	1092	1250	57	1408	1641	2198

SPOKANE RIVER BASIN
Reservoir Storage (1000 AF) - End of April

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
COEUR D'ALENE	238.5	181.5	546.5	246.7

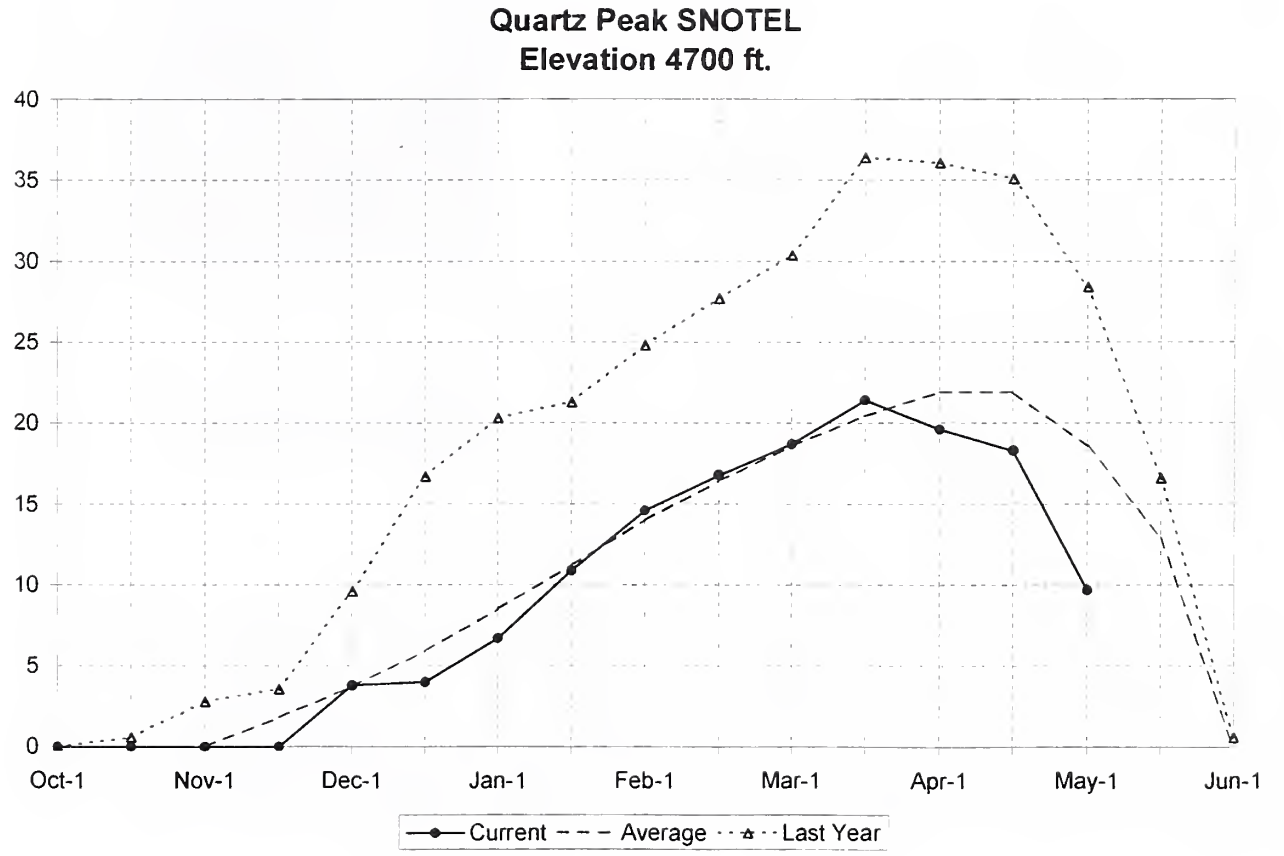
SPOKANE RIVER BASIN
Watershed Snowpack Analysis - May 1, 1998

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
SPOKANE RIVER	10	32	50
NEWMAN LAKE	1	34	52

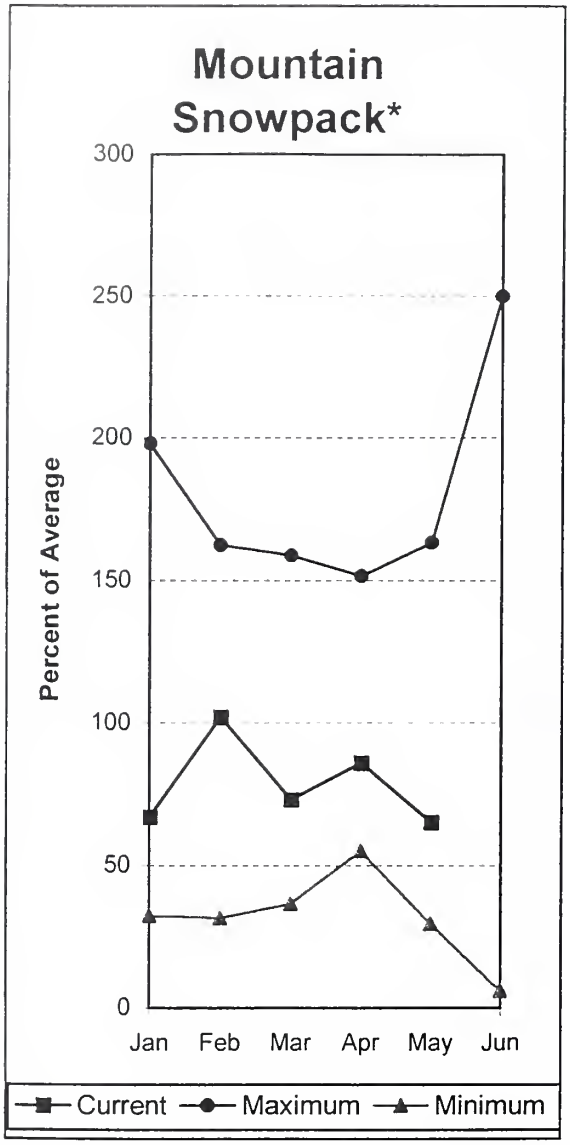
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

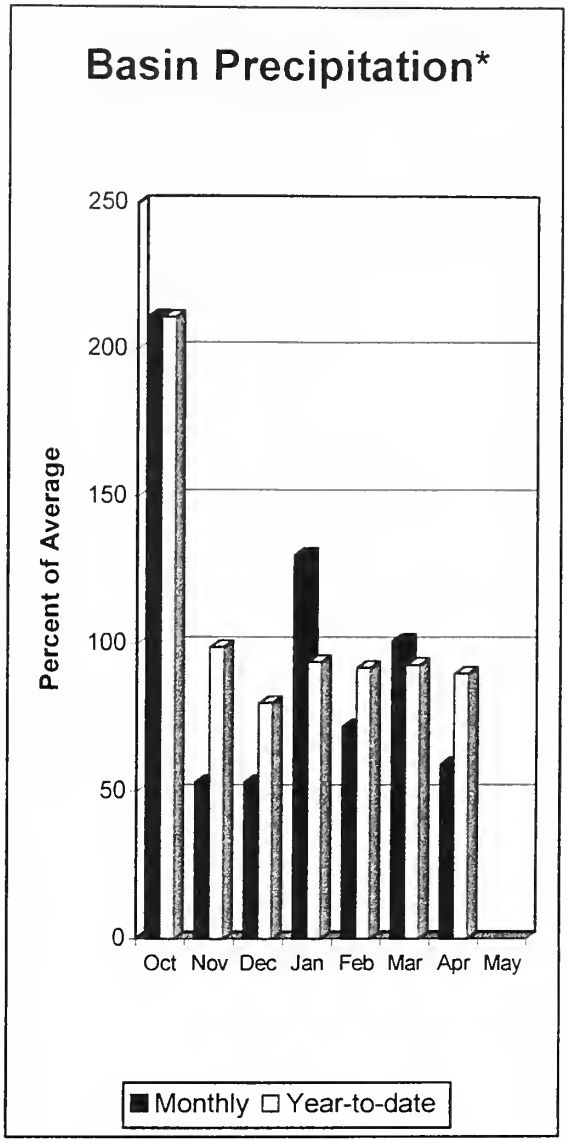
The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.



Colville - Pend Oreille River Basins





*Based on selected stations

The forecast for the Kettle River streamflow is 105% of average; the Pend Oreille below Box Canyon, 59%; and the Priest River near the town of Priest River, 62% of average for the summer runoff period. April streamflow was 88% of average on the Pend Oreille River; 110% on the Columbia at the International Boundary; and 172% on the Kettle River. May 1 snow cover was 65% of average in the Pend Oreille Basin and 79% of average in the Kettle River Basin. Precipitation during April was 59% of average, bringing the year-to-date precipitation to 90% of average. Reservoir storage in Roosevelt and Banks Lakes was not available in time for this publication. Average temperatures were 3 degrees above normal.

For more information contact your local Natural Resources Conservation Service office.

Colville - Pend Oreille River Basins

Streamflow Forecasts - May 1, 1998

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
PEND OREILLE Lake Inflow (1,2)	MAY-JUL	4805	6149	6760	61	7371	8715	11070
	MAY-SEP	5380	6872	7550	61	8228	9720	12290
PRIEST nr Priest River (1,2)	MAY-SEP	260	370	420	62	470	580	680
PEND OREILLE bl Box Canyon (1,2)	MAY-SEP	4675	6528	7370	59	8212	10065	12430
	MAY-JUN	3517	4915	5550	59	6185	7583	9410
CHAMOKANE CREEK near Long Lake	MAY-AUG	4.75	6.93	8.40	99	9.87	12.05	8.52
COLVILLE at Kettle Falls	MAY-SEP	52	68	78	93	89	104	84
	MAY-JUN	40	51	58	91	65	76	64
KETTLE near Laurier	MAY-SEP	1394	1554	1662	105	1770	1930	1582
	MAY-JUN	1172	1284	1360	104	1436	1548	1314
COLUMBIA at Birchbank (1,2)	MAY-JUL	22932	25179	26200	82	27221	29468	32090
	MAY-SEP	29436	32299	33600	82	34901	37764	40760
	MAY-JUN	16264	17836	18550	82	19264	20836	22620

COLVILLE - PEND OREILLE RIVER BASINS
Reservoir Storage (1000 AF) - End of April

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
ROOSEVELT		NO REPORT		
BANKS		NO REPORT		

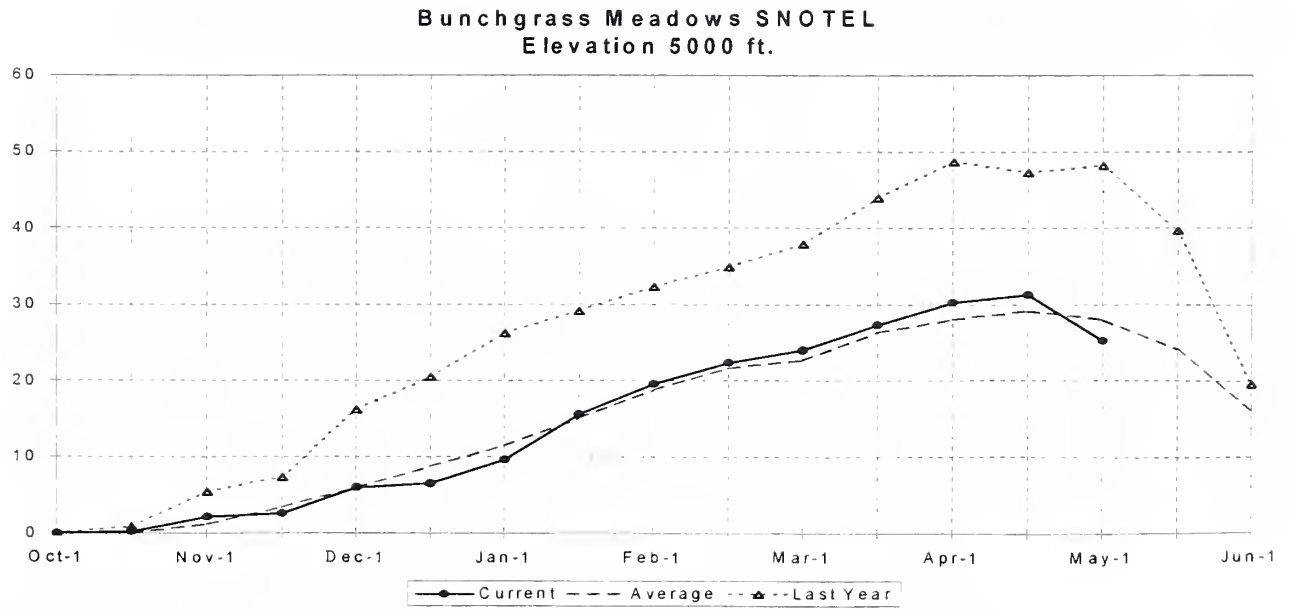
COLVILLE - PEND OREILLE RIVER BASINS
Watershed Snowpack Analysis - May 1, 1998

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
COLVILLE RIVER	0	0	0
PEND OREILLE RIVER	90	40	65
KETTLE RIVER	8	55	79

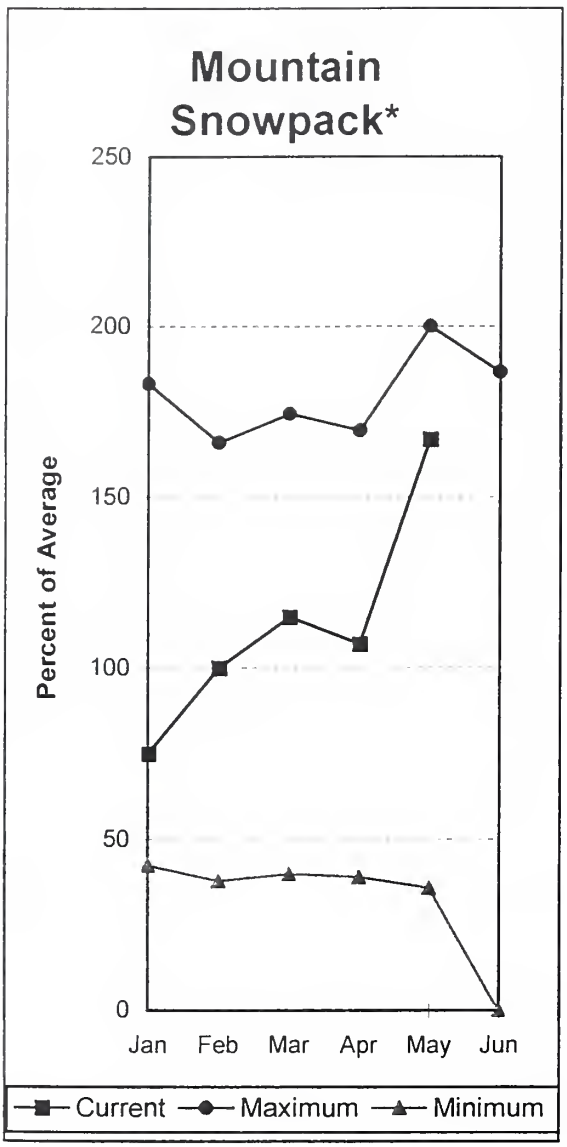
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

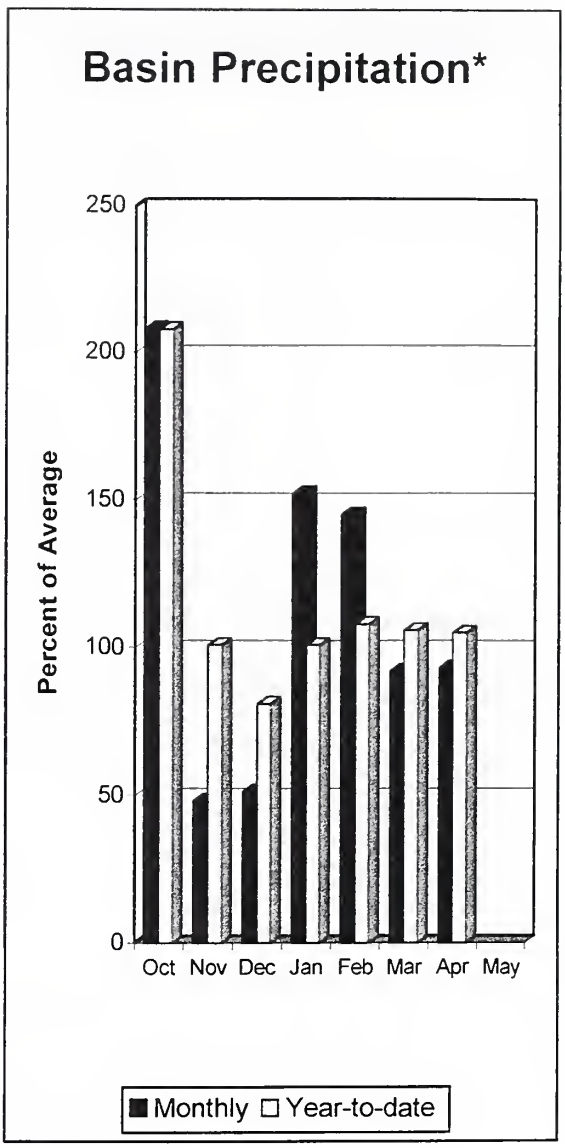
The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.



Okanogan - Methow River Basins





*Based on selected stations

Summer runoff forecast for the Okanogan River is 73% of average; the Similkameen River, 73%; the Methow River, 94%; and Salmon Creek, 122% of average. May 1 snow cover in the Okanogan was 82% of average; the Methow, 95%; and the Similkameen River, 57%. Salmon Meadows SNOTEL site above Conconully Lake had an May 1 reading of 436% of average. April precipitation in the Okanogan-Methow was 93% of average, with precipitation for the water year at 105% of average. April streamflow for the Methow River was 133% of average; 125% for the Okanogan River; and 81% for the Similkameen. Snow-water-content at the Salmon Meadows SNOTEL, near Conconully, was 4.8 inches. Average for this site is 1.1 inches on May 1. Combined storage in the Conconully Reservoirs was 23,800 acre feet, which is 101% of capacity and 149% of the May 1 average.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - May 1, 1998

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
SIMILKAMEEN near Nighthawk (1)	MAY-JUL	610	803	890	74	977	1170	1205
	MAY-SEP	663	860	950	73	1040	1237	1300
	MAY-JUN	488	668	750	74	832	1012	1014
OKANOGAN near Tonasket (1)	MAY-JUL	476	812	965	73	1118	1454	1328
	MAY-SEP	548	914	1080	73	1246	1612	1484
	MAY-JUN	381	669	800	73	931	1219	1094
SALMON CREEK near Conconully	MAY-JUL	12.0	18.0	22	122	26	32	18.0
	MAY-SEP	12.5	18.7	23	122	27	34	18.9
METHOW RIVER near Pateros	MAY-SEP	693	757	800	94	843	907	854
	MAY-JUL	647	704	742	94	780	837	786
	MAY-JUN	537	590	626	95	662	715	659

OKANOGAN - METHOW RIVER BASINS
Reservoir Storage (1000 AF) - End of April

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
SALMON LAKE	10.5	10.3	8.7	8.0
CONCONULLY RESERVOIR	13.0	13.5	12.3	8.0

OKANOGAN - METHOW RIVER BASINS
Watersned Snowpack Analysis - May 1, 199?

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
OKANOGAN RIVER	22	60	82
OMAK CREEK	1	89	167
SANPOIL RIVER	0	0	0
SIMILKAMEEN RIVER	5	44	57
CONCONULLY LAKE	1	53	436
METHOW RIVER	3	62	95

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

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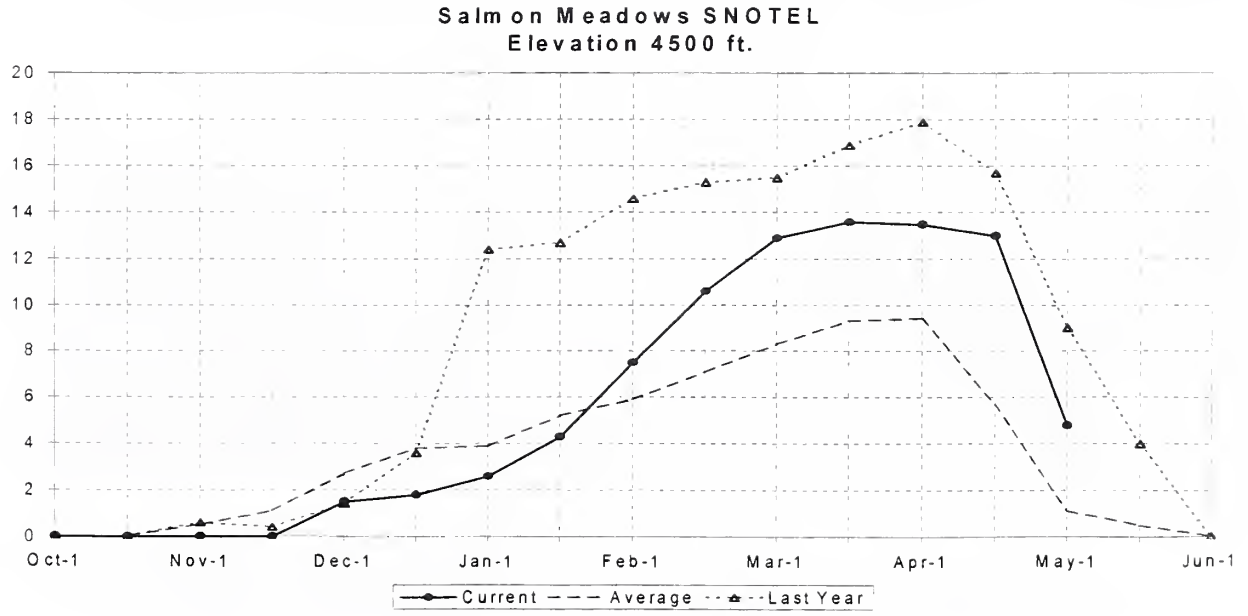
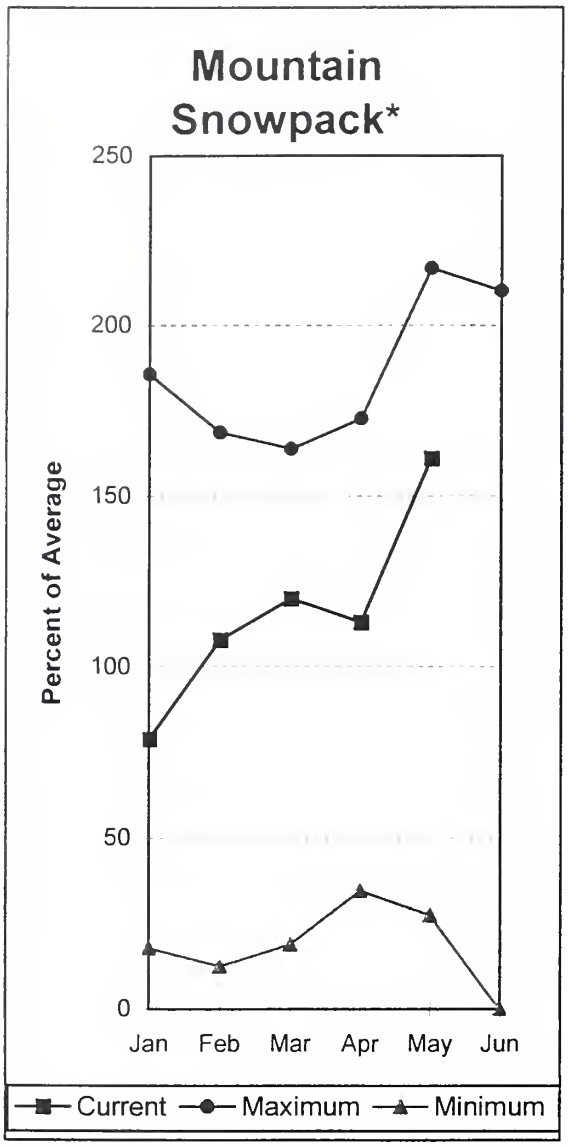
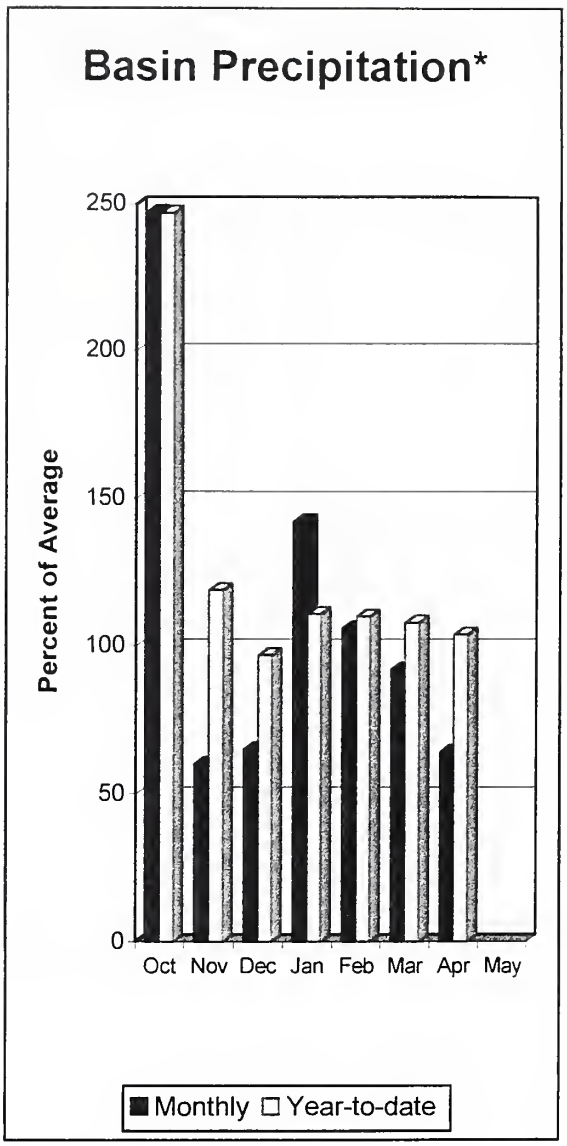


Wenatchee - Chelan River Basins





*Based on selected stations

Precipitation during April was 64% of average in the basin and 104% for the year-to-date. Runoff for the Entiat River is forecast to be 101% of average for the summer. The May-September forecast for the Chelan River is for normal flows; for the Wenatchee River at Plain it is 93%; and for the Stehekin it is 100% of average. Icicle, Stemilt and Squilchuck Creeks are all expected to have near normal flows this summer as well. April streamflow on the Chelan River was 108% of average, and the Wenatchee River averaged normal flows. May 1 snowpack in the Wenatchee Basin was 90% of average. The Chelan Basin was 100% of average; Colockum Ridge was 312%; and Stemilt Creek was 144% of average. Snowpack in the Entiat River Basin was near normal. Reservoir storage in Lake Chelan was 312,800 acre feet, or 70% of May 1 average and 46% of capacity. Lyman Lake SNOTEL had the most snow water with 68.5 inches of water. This site would normally have 58.7 inches on May 1. Temperatures were slightly above normal for April.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - May 1, 1998

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF
CHELAN RIVER near Chelan	MAY-SEP	929	995	1040	100	1085	1151	1041
	MAY-JUL	812	873	915	101	957	1018	905
	MAY-JUN	589	655	700	101	745	811	693
STEHEKIN near STEHEKIN	MAY-SEP	672	718	750	100	782	828	751
	MAY-JUL	548	594	625	100	656	702	625
	MAY-JUN	378	427	460	100	493	542	462
ENTIAT RIVER near Ardenvoir	MAY-SEP	189	202	211	101	220	233	208
	MAY-JUL	169	182	191	102	200	213	188
	MAY-JUN	132	145	155	103	165	178	150
WENATCHEE at Plain	MAY-SEP	845	919	970	93	1021	1095	1042
	MAY-JUL	761	819	858	93	897	955	925
	MAY-JUN	568	613	644	90	675	720	716
STEMILT nr Wenatchee (miners in)	MAY-SEP	85	112	130	94	148	175	138
ICICLE CREEK near Leavenworth	MAY-SEP	268	278	285	93	292	302	305
	MAY-JUL	236	250	260	93	270	284	279
	MAY-JUN	166	192	210	94	228	254	224

WENATCHEE - CHELAN RIVER BASINS
Reservoir Storage (1000 AF) - End of April

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
CHELAN LAKE	676.1	312.8	233.6	448.8

WENATCHEE - CHELAN RIVER BASINS
Watershed Snowpack Analysis - May 1, 1998

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
CHELAN LAKE BASIN	4	63	100
ENTIAT RIVER	1	41	606
WENATCHEE RIVER	9	48	90
SQUILCHUCK CREEK	0	0	0
STEMILT CREEK	1	58	144
COLOCKUM CREEK	1	116	312

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

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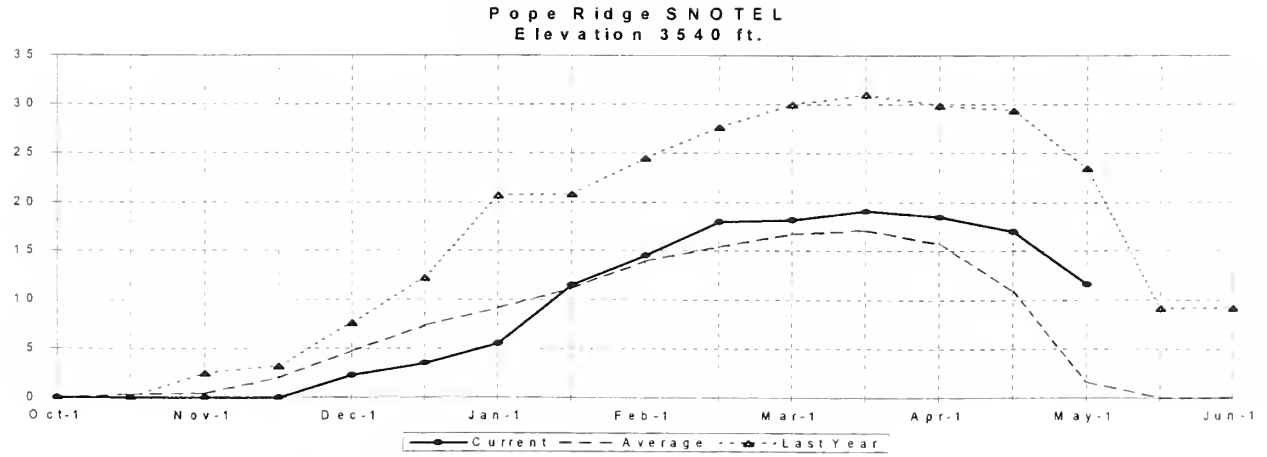
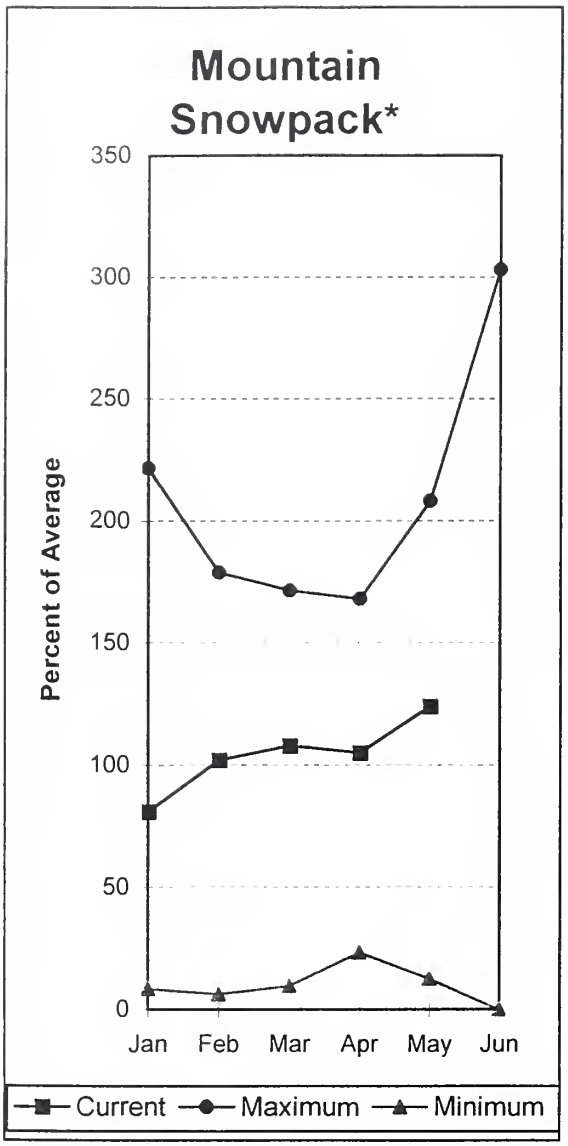
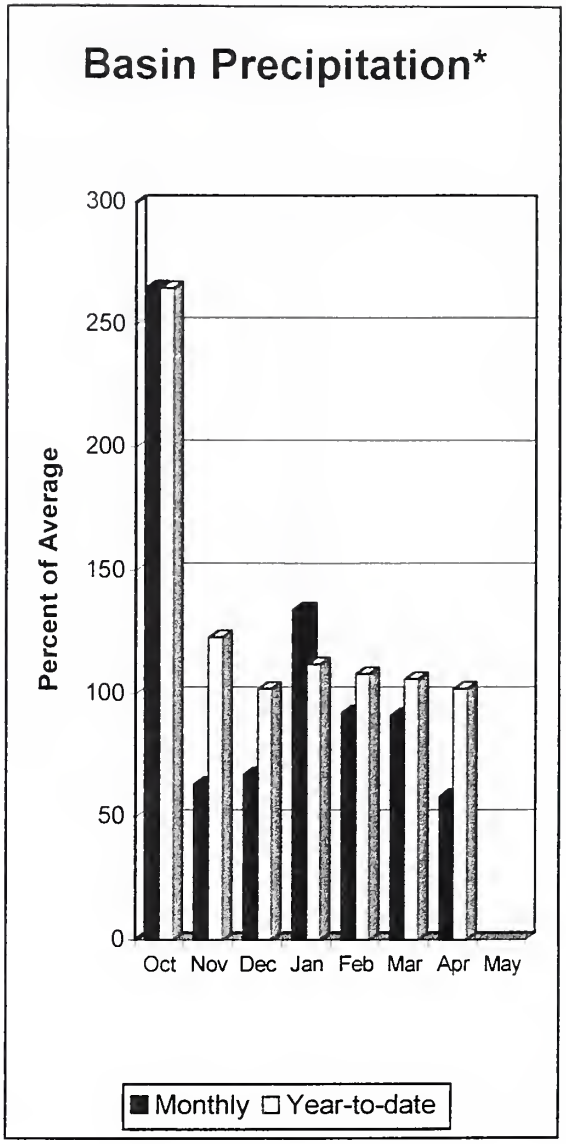


Yakima River Basin





*Based on selected stations

May 1 reservoir storage for the five major reservoirs was 958,400 acre feet, or 122% of average. May 1 summer streamflow forecasts are for near to slightly below normal in the Yakima Basin. Forecasts for the Yakima River at Cle Elum, are for 86% of average; Naches River, 95%; the Yakima River near Parker, 88%; Ahtanum Creek, 92%; and the Tieton River, 98%. The Klickitat River near Glenwood is forecast to have 111% of average flows this summer. Volume forecasts for the Yakima Basin are for natural flow. As such, they may differ from the U.S. Bureau of Reclamation's forecast for the total water supply available, which includes irrigation return flow. April streamflows within the basin were: the Yakima River near Kiona, 103% of average; the Yakima River near Cle Elum, 91%; and the Naches River at 111%. May 1 snowpack was 106% based upon 15 snow courses and SNOTEL readings within the Yakima Basin. Precipitation was 58% of average for April and 102% for the water year-to-date.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - May 1, 1998

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
KEECHELUS LAKE INFLOW	MAY-JUL	67	77	84	87	90	100	96
	MAY-SEP	72	85	93	87	101	114	107
	MAY-JUN	53	64	71	87	77	88	81
KACHESS LAKE INFLOW	MAY-JUL	62	68	73	85	78	85	86
	MAY-SEP	64	73	78	85	84	92	92
	MAY-JUN	52	59	63	85	67	74	74
CLE ELUM LAKE INFLOW	MAY-JUL	257	275	288	85	301	319	339
	MAY-SEP	282	305	320	85	335	358	378
	MAY-JUN	201	221	235	85	249	269	276
YAKIMA at Cle Elum	MAY-JUN	406	444	470	86	496	534	546
	MAY-JUL	496	537	565	86	593	634	657
	MAY-SEP	548	600	635	86	670	722	740
BUMPING LAKE INFLOW	MAY-SEP	92	103	110	94	117	128	117
	MAY-JUL	87	95	101	95	107	115	106
	MAY-JUN	73	80	85	99	90	97	86
AMERICAN RIVER near Nile	MAY-SEP	95	104	110	108	116	125	102
	MAY-JUL	86	94	100	109	105	114	92
	MAY-JUN	67	75	81	108	87	95	75
RIMROCK LAKE INFLOW	MAY-SEP	174	189	200	98	211	226	204
	MAY-JUL	146	157	165	99	173	184	167
	MAY-JUN	101	116	127	98	138	153	129
NACHES near Naches	MAY-SEP	561	614	650	95	686	739	686
	MAY-JUL	512	555	585	96	615	658	609
	MAY-JUN	419	458	485	96	512	551	505
AHTANUM CREEK nr Tampico (2)	MAY-SEP	27	32	35	92	38	44	38
	MAY-JUL	24	29	32	93	35	39	34
	MAY-JUN	19.7	23	26	93	29	32	28
YAKIMA near Parker	MAY-SEP	1212	1315	1385	88	1455	1558	1580
	MAY-JUL	1065	1157	1220	88	1283	1375	1390
	MAY-SEP	1212	1315	1385	88	1455	1558	1580
KLICKITAT near Glenwood	MAY-JUN	81	90	96	110	102	110	87
	MAY-SEP	111	122	130	111	138	149	117

YAKIMA RIVER BASIN
Reservoir Storage (1000 AF) - End of April

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
KEECHELUS	157.8	150.2	118.9	119.0
KACHESS	239.0	214.9	185.9	197.0
CLE ELUM	436.9	407.0	279.1	308.0
BUMPING LAKE	33.7	21.2	15.1	15.0
RIMROCK	198.0	165.1	119.0	144.0

YAKIMA RIVER BASIN
Watershed Snowpack Analysis - May 1, 1998

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
YAKIMA RIVER	15	54	106
AHTANUM CREEK	2	74	143

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

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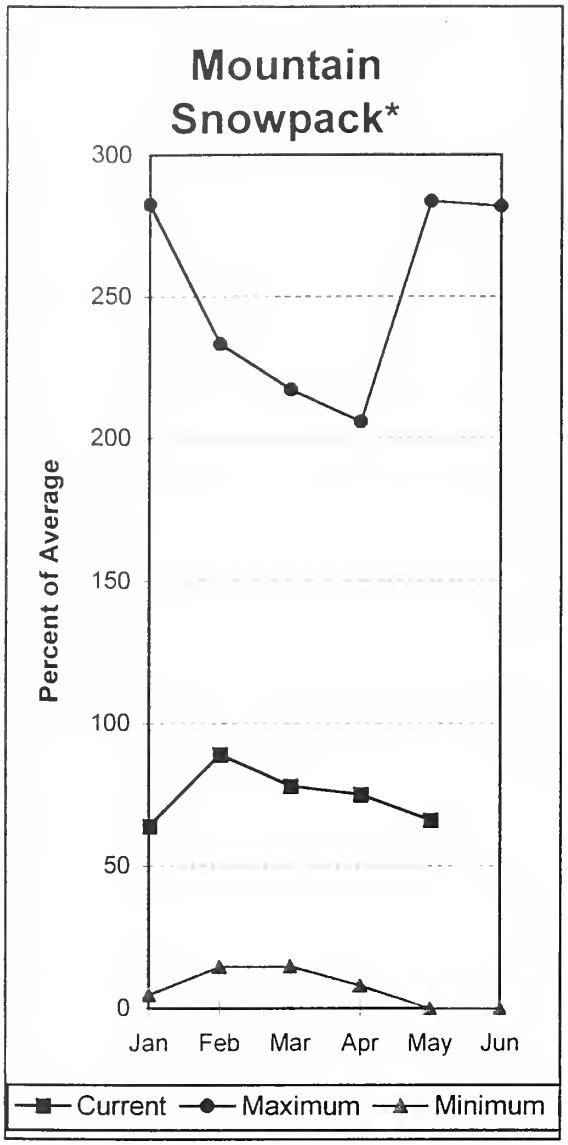
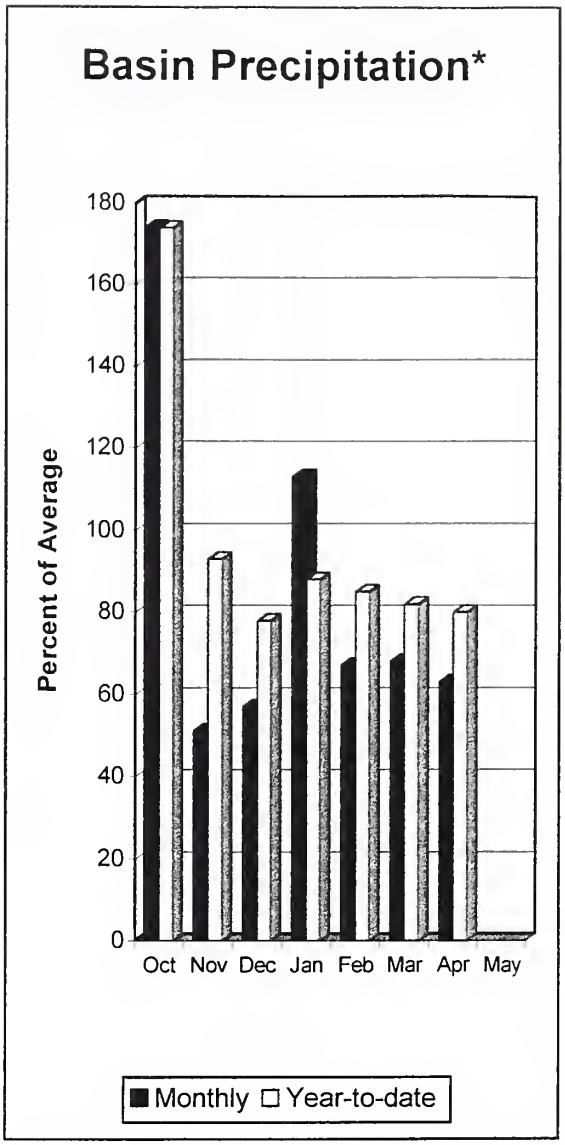
(2) - The value is natural flow - actual flow may be affected by upstream water management.

Walla Walla River Basin





*Based on selected stations

April precipitation was 63% of average, bringing the year-to-date precipitation to 80% of average. May 1 snowpack was 66% of average. The summer forecast is for 77% of average streamflow in the Snake River below Lower Granite Dam, 93% for the Grande Ronde at Troy, and 90% for Mill Creek. April streamflow was 115% of average for the Walla Walla River; 100% for the Snake River below Lower Granite Dam; and 77% for the Grande Ronde River near Troy. The Touchet SNOTEL site had 7.8 inches of snow-water-equivalent. The average May 1 reading for this site is 2.5 inches. Average temperatures were near normal for the area.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - May 1, 1998

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
GRANDE RONDE at Troy (1)	MAY-JUL	566	734	810	93	886	1054	872
	MAY-SEP	628	815	900	93	985	1172	970
SNAKE blw Lower Granite Dam (1,2)	MAY-JUL	9510	11772	12800	76	13828	16090	16940
	MAY-SEP	11295	13912	15100	77	16288	18905	19650
MILL CREEK at Walla Walla	MAY-SEP	3.57	5.46	6.75	90	8.04	9.93	7.50
	MAY-JUL	3.43	5.32	6.60	90	7.88	9.77	7.30
	MAY-JUN	3.39	5.18	6.40	90	7.62	9.41	7.10
SF WALLA WALLA near Milton-Freewater	MAY-JUL	25	29	32	85	34	38	37
	MAY-SEP	36	41	44	88	47	52	50

WALLA WALLA RIVER BASIN
Reservoir Storage (1000 AF) - End of April

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

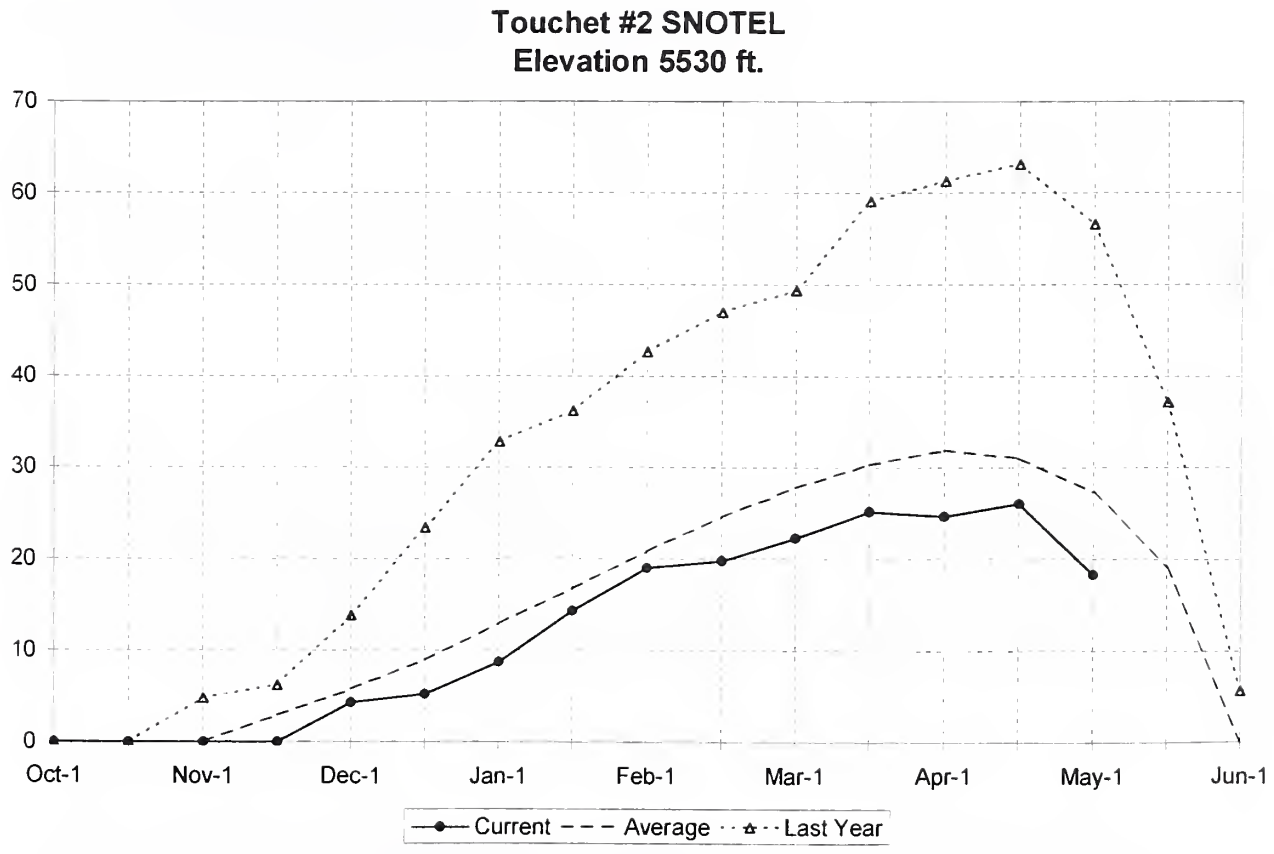
WALLA WALLA RIVER BASIN
Watershed Snowpack Analysis - May 1, 1998

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
WALLA WALLA RIVER	2	30	66

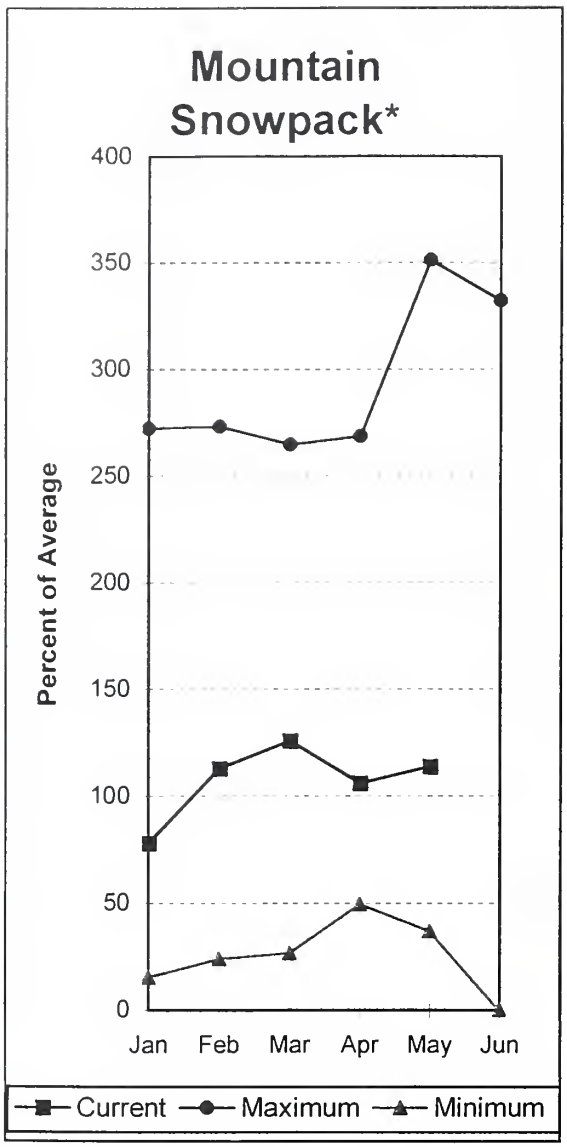
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

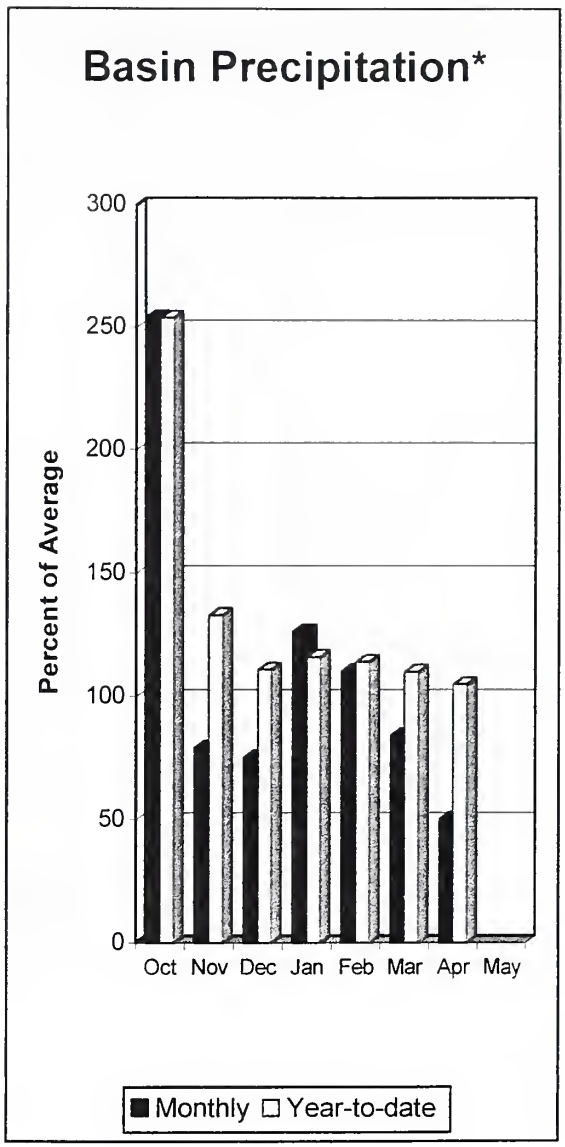
The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.



Cowlitz - Lewis River Basins





*Based on selected stations

The forecast for summer runoff in the Lewis River Basin is for 89% of average. The Cowlitz River at Castle Rock, is forecast for 96% of average runoff. April streamflow was 67% of average for the Cowlitz River, and 68% of average for the Lewis River. April precipitation was 50% of average. It was 105% of average for the water-year. May 1 snow cover for the Cowlitz River was 106%, and the Lewis River was 129% of average. The Paradise Park SNOTEL recorded the most water-content for the basin with 70 inches of water. Average May 1 water-content is 61.8 inches. Average temperatures were 1 to 2 degrees above normal during April.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - May 1, 1998

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	50% (Most Probable) (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
LEWIS at Ariel (2)	MAY-JUL	496	570	620	89	670	744	697
	MAY-SEP	633	709	760	89	811	887	850
	MAY-JUN	402	469	515	89	561	628	579
COWLITZ R. bl Mayfield Dam (2)	MAY-SEP	630	1094	1410	92	1726	2190	1531
	MAY-JUL	532	922	1188	92	1454	1844	1292
	MAY-JUN	424	740	955	92	1170	1486	1038
COWLITZ R. at Castle Rock (2)	MAY-SEP	933	1527	1930	96	2333	2927	2021
	MAY-JUL	770	1264	1600	95	1936	2430	1679
	MAY-JUN	610	1009	1280	95	1551	1950	1349
KLICKITAT near Glenwood	MAY-JUN	81	90	96	110	102	110	87
	MAY-SEP	111	122	130	117	138	149	117

COWLITZ - LEWIS RIVER BASINS
Reservoir Storage (1000 AF) - End of April

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

COWLITZ - LEWIS RIVER BASINS
Watershed Snowpack Analysis - May 1, 1998

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
LEWIS RIVER	4	56	129
COWLITZ RIVER	7	64	106

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

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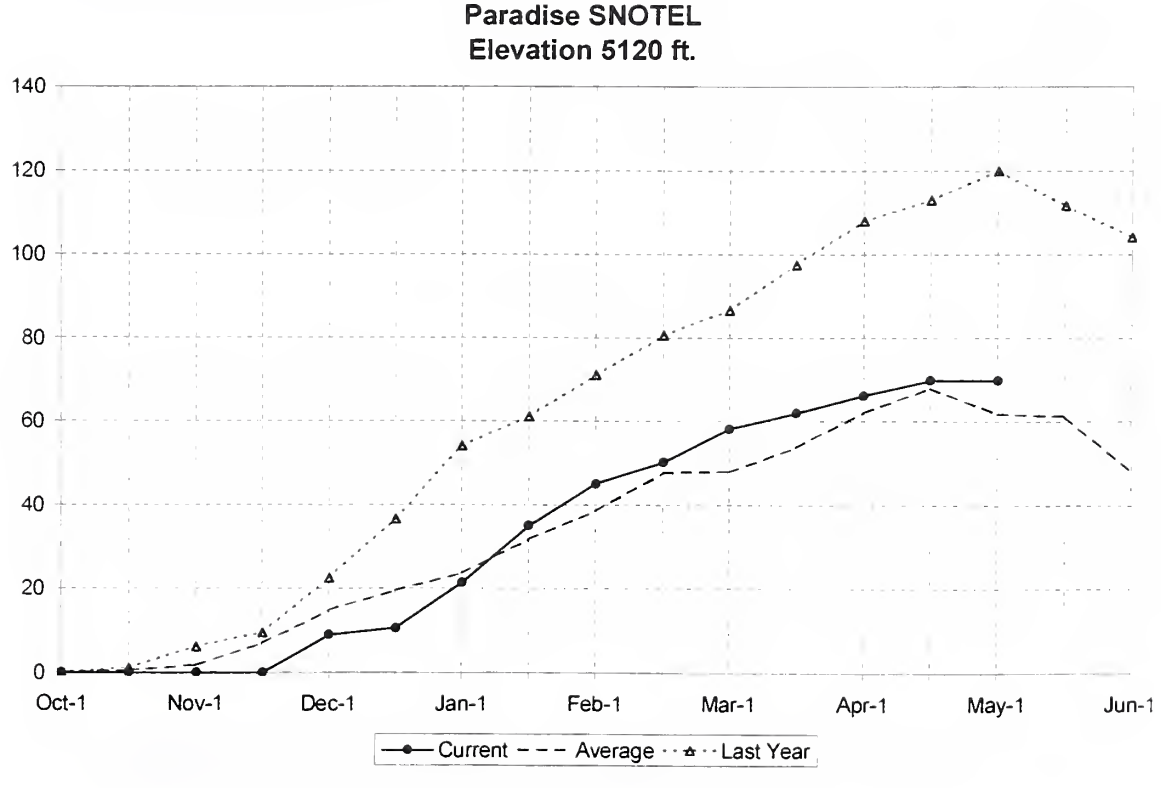
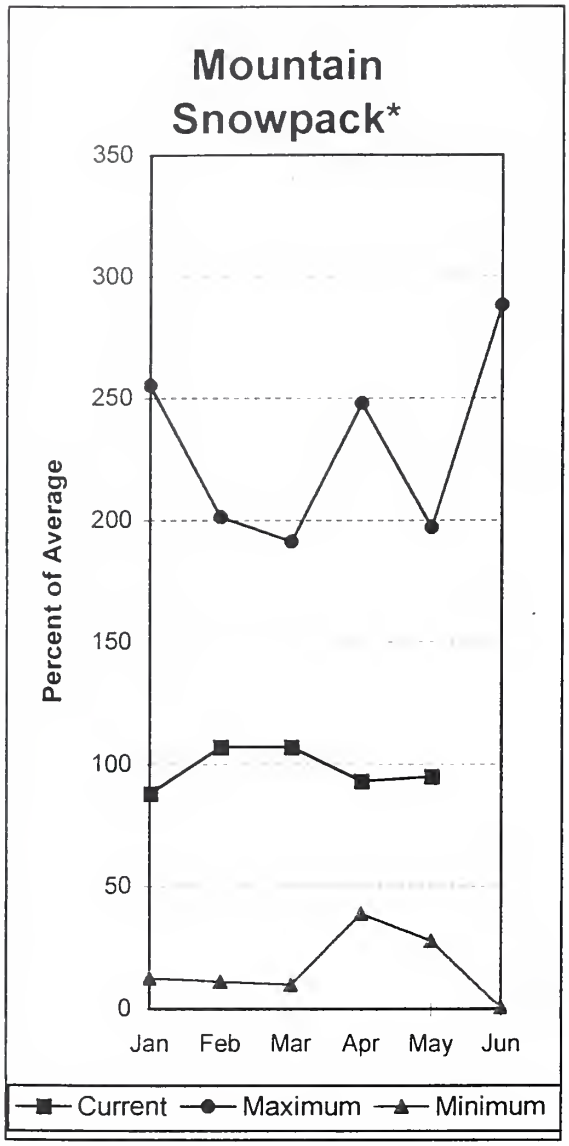
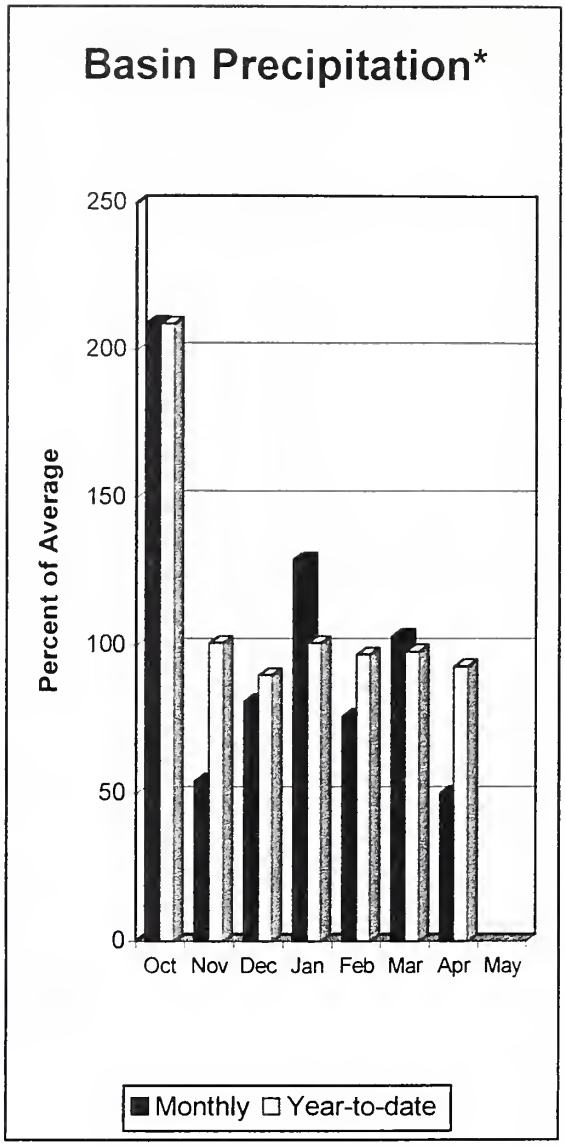
(2) - The value is natural flow - actual flow may be affected by upstream water management.



White - Green River Basins





*Based on selected stations

Summer runoff is forecast to be 68% of average for the Green River. A 10% drop from last month. The White River should see near to slightly below normal flows while the Nisqually River will most likely experience below normal flows this summer. May 1 snowpack was 123% of average in the White River Basin; and 78% in the Green River Basin. Water-content on May 1 at the Morse Lake SNOTEL, at an elevation of 5,400 feet, was 68.3 inches. This site has an May 1 average of 44.4 inches. April precipitation was 50% of average, bringing the water year-to-date to 93% of average for the basins. April temperatures were slightly above average.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - May 1, 1998

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
GREEN RIVER below Howard Hanson Dam	MAY-JUL	79	101	116	68	131	153	170
	MAY-SEP	94	118	135	68	152	176	198
	MAY-JUN	68	87	100	68	113	132	147

WHITE - GREEN RIVER BASINS
Reservoir Storage (1000 AF) - End of April

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

WHITE - GREEN RIVER BASINS
Watershed Snowpack Analysis - May 1, 1998

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
WHITE RIVER	3	76	123
GREEN RIVER	6	34	78

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

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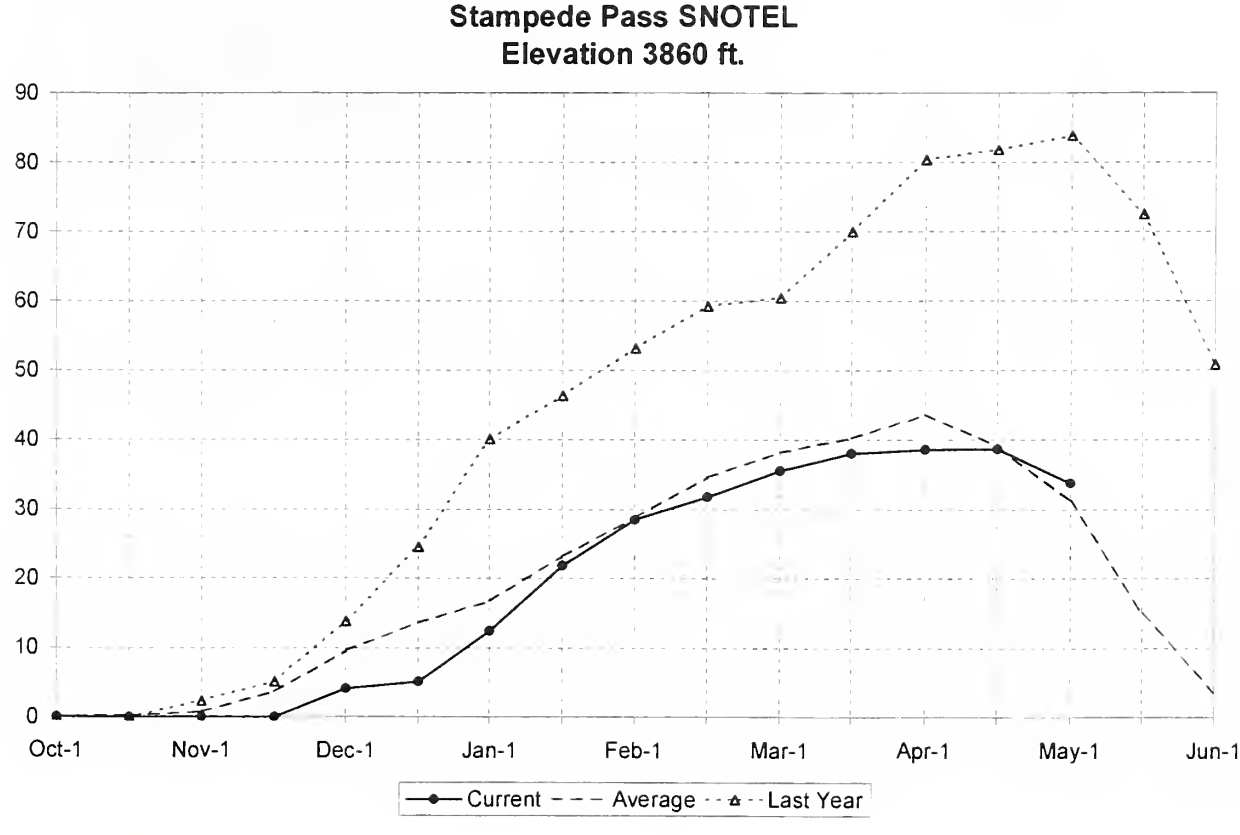
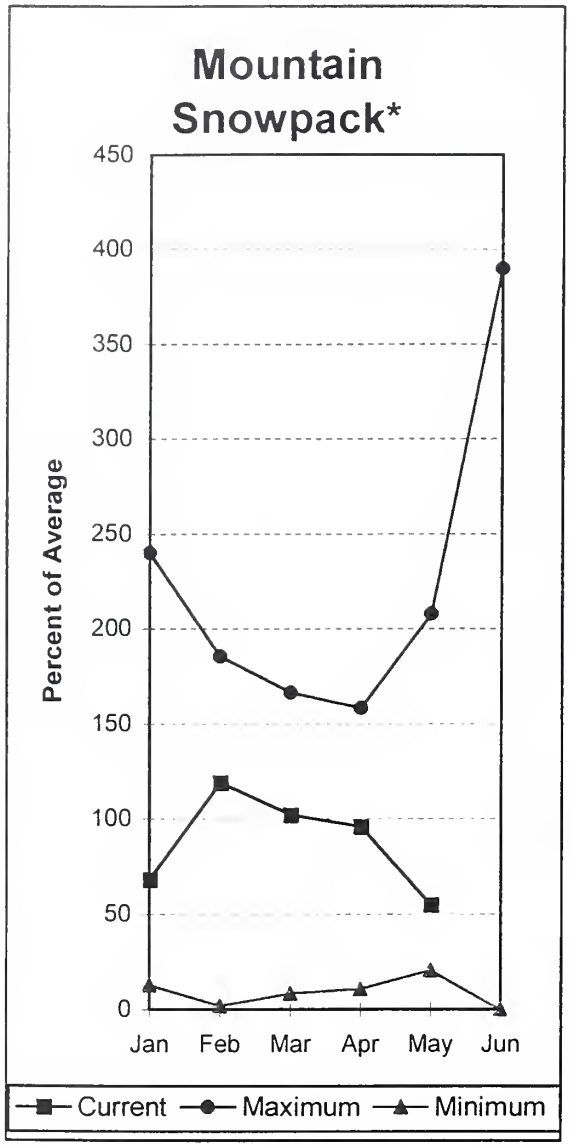
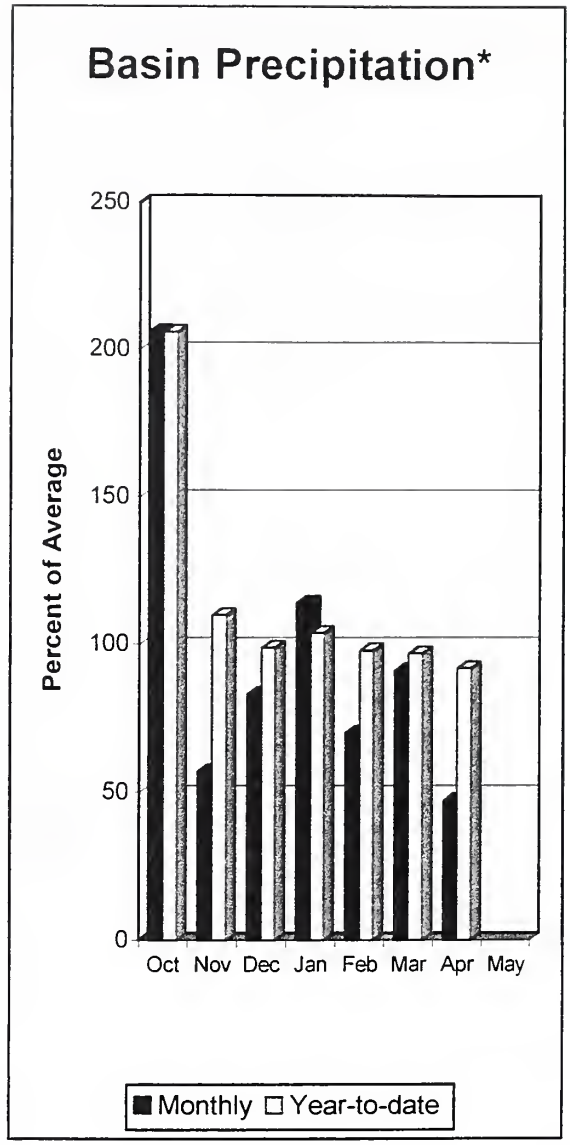
(2) - The value is natural flow - actual flow may be affected by upstream water management.



Central Puget Sound River Basins





*Based on selected stations

Forecast for spring and summer flows are: 77% for the Cedar River near Cedar Falls; 73% for the Rex River; 90% for the South Fork of the Tolt River; and 75% for the Cedar River at Cedar Falls. The Cedar River at Cedar Falls stream gage may be affected by upstream reservoir control. Basin-wide precipitation for April was 47% of average, bringing the water-year-to-date to 92% of average. May 1 snow cover in the Cedar River Basin was 48%; the Tolt River Basin was 28%; the Snoqualmie River Basin was 78%; and the Skykomish River Basin was 65% of average. Stevens Pass SNOTEL, at 4,070 feet, had 22.1 inches of water content. Average May 1 water content is 32.1 inches. April temperatures were 1 to 2 degrees above normal.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - May 1, 1998

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	50% (Most Probable) (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
CEDAR near Cedar Falls	MAY-JUL	30	37	42	75	47	54	56
	MAY-SEP	35	43	49	77	54	62	64
	MAY-JUN	28	33	37	77	40	46	47
REX near Cedar Falls	MAY-JUL	8.5	11.8	14.0	73	16.2	19.5	19.2
	MAY-SEP	10.0	13.7	16.2	73	18.7	22	22
	MAY-JUN	7.6	10.2	12.0	73	13.8	16.4	16.5
CEDAR RIVER at Cedar Falls	MAY-JUL	8.9	27	40	74	53	71	54
	MAY-SEP	4.9	26	41	75	56	77	55
	MAY-JUN	15.9	29	39	74	48	61	52
SOUTH FORK TOLT near Index	MAY-JUL	7.4	8.9	9.9	87	10.9	12.4	11.4
	MAY-SEP	9.3	11.2	12.5	90	13.8	15.7	13.9
	MAY-JUN	6.11	7.32	8.14	88	8.96	10.17	9.30

CENTRAL PUGET SOUND RIVER BASINS
Reservoir Storage (1000 AF) - End of April

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

CENTRAL PUGET SOUND RIVER BASINS
Watershed Snowpack Analysis - May 1, 1998

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
CEDAR RIVER	4	24	48
TOLT RIVER	1	18	28
SNOQUALMIE RIVER	3	41	78
SKYKOMISH RIVER	2	32	65

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

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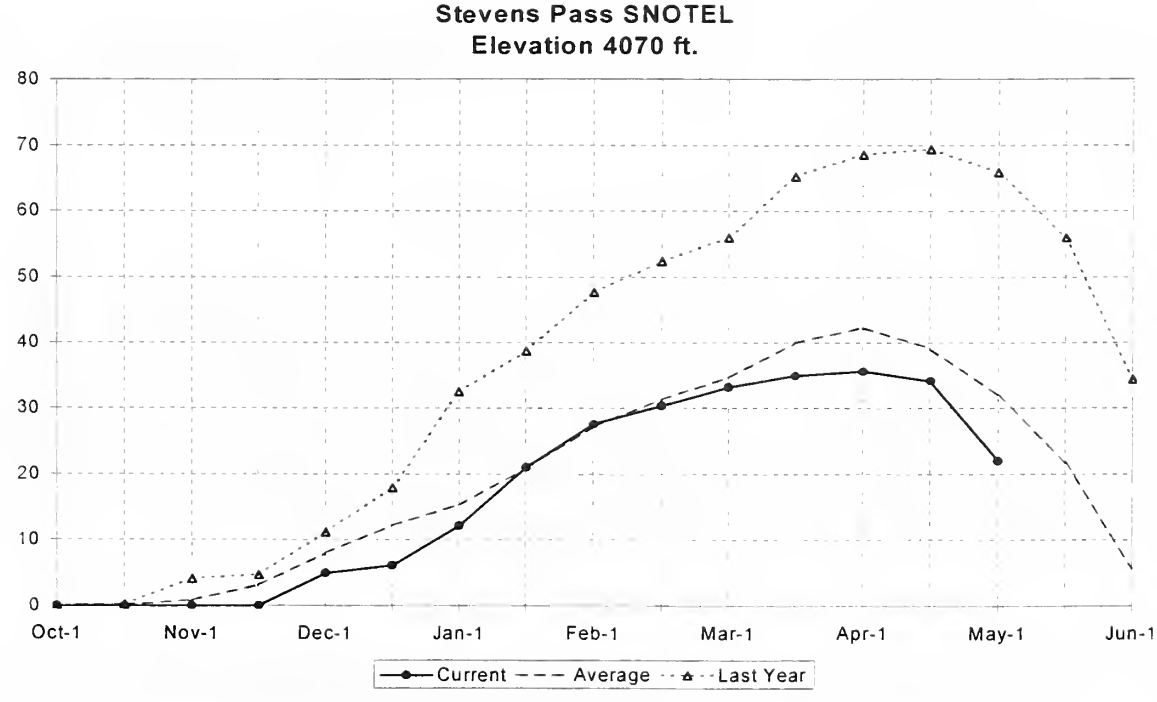
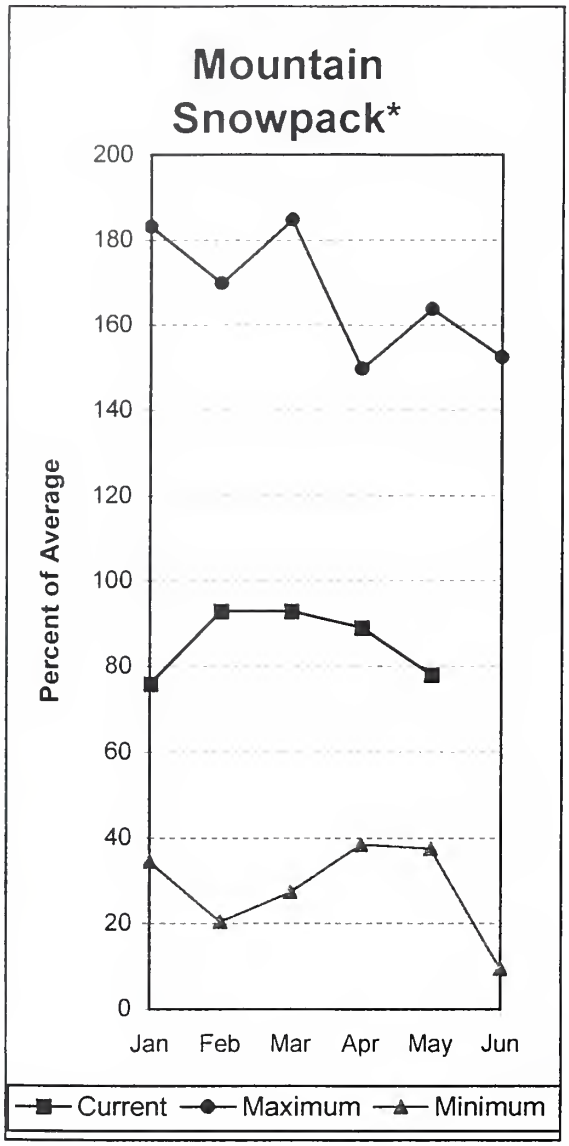
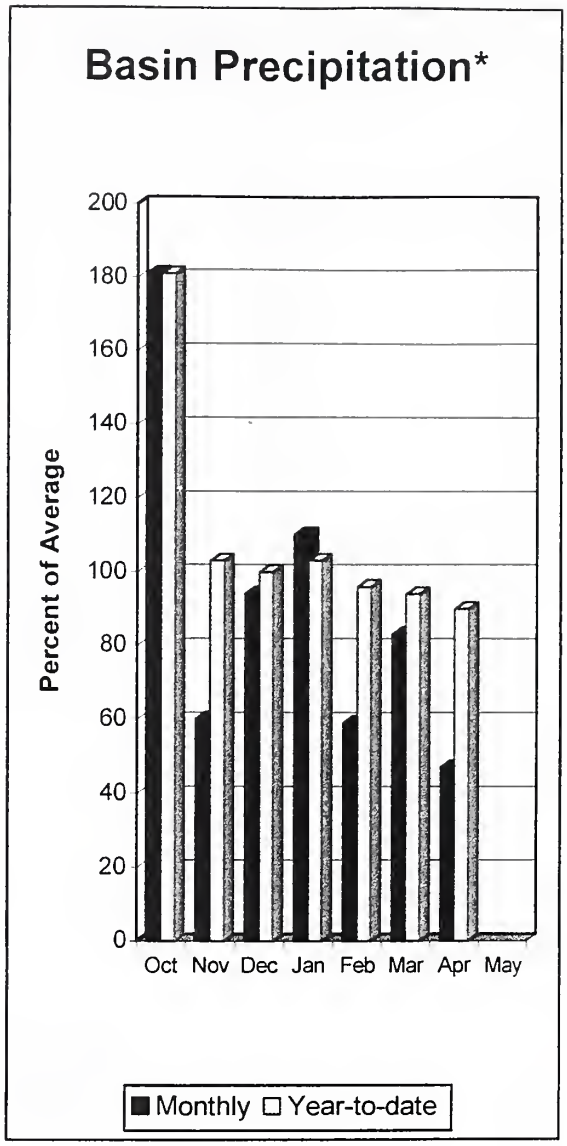
(2) - The value is natural flow - actual flow may be affected by upstream water management.



North Puget Sound River Basins





*Based on selected stations

Forecast for the Skagit River streamflow is for 85% of average for the spring and summer period. April streamflow in the Skagit River was 79% of average. Other forecast points included the Baker River at 86%; and Thunder Creek at 90% of average. Basin-wide precipitation for April was only 47% of average, bringing water-year-to-date to 90% of average. May 1 snow cover in the Skagit River Basin was 85%; the Baker River Basin was 93%; and the Nooksack River Basin dropped to 56% of average. Rainy Pass SNOTEL, at 4,780 feet, had 29 inches of water content. Average May 1 water content is 36.8 inches. May 1 Skagit River reservoir storage was 112% of average and 51% of capacity. Average April temperatures were about 2 degrees above normal for the basin.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - May 1, 1998

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	50% (Most Probable) (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
THUNDER CREEK near Newhalem	MAY-JUL	162	177	188	90	199	214	209
	MAY-SEP	252	268	278	90	288	304	308
	MAY-JUN	86	104	116	90	128	146	129
SKAGIT near Newhalem (2)	MAY-JUL	1255	1341	1400	85	1459	1545	1649
	MAY-SEP	1513	1607	1670	85	1733	1827	1961
	MAY-JUN	879	975	1040	85	1105	1201	1224
BAKER RIVER near Concrete	MAY-JUL	524	575	609	87	643	694	703
	MAY-SEP	675	750	802	86	854	929	930
	MAY-JUN	352	400	433	91	466	514	478

NORTH PUGET SOUND RIVER BASINS
Reservoir Storage (1000 AF) - End of April

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
ROSS	1404.1	719.5	695.4	644.4
DIABLO RESERVOIR	90.6	87.8	87.4	---
GORGE RESERVOIR		NO REPORT		

NORTH PUGET SOUND RIVER BASINS
Watershed Snowpack Analysis - May 1, 1998

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
SKAGIT RIVER	13	56	85
BAKER RIVER	4	70	93
NOOKSACK RIVER	2	42	56

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

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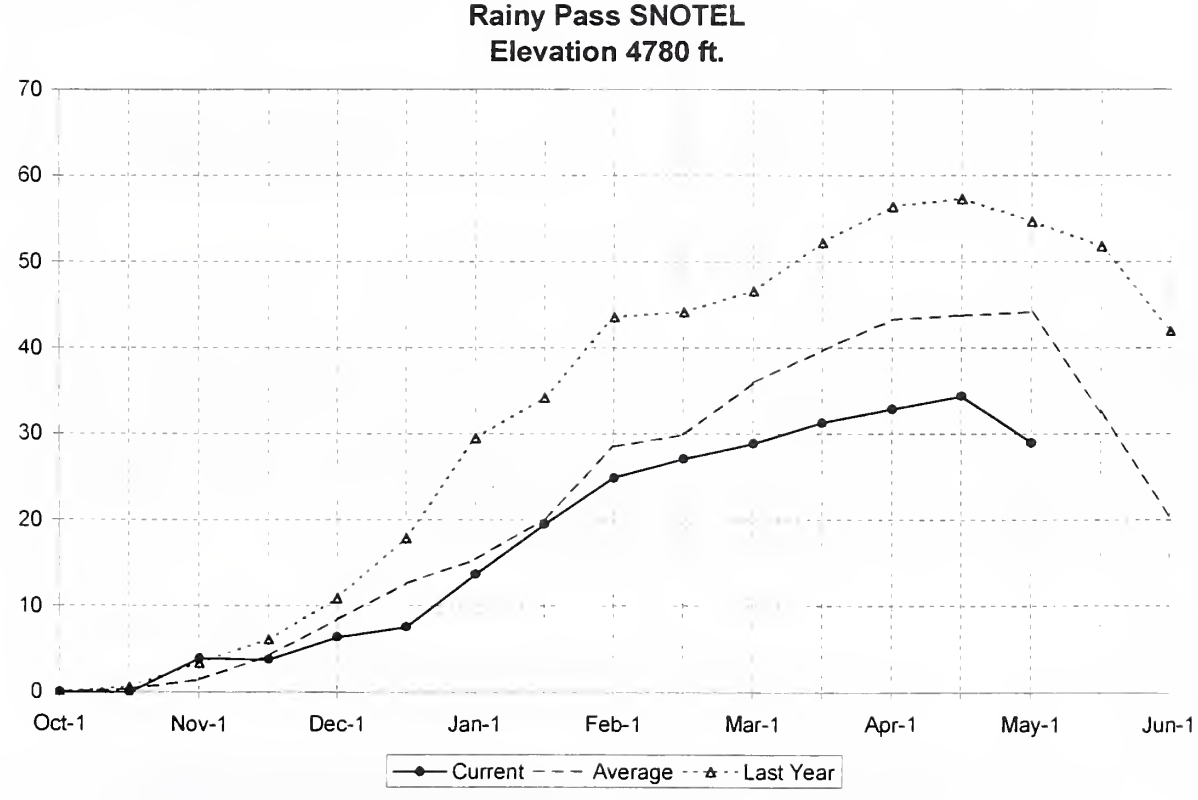
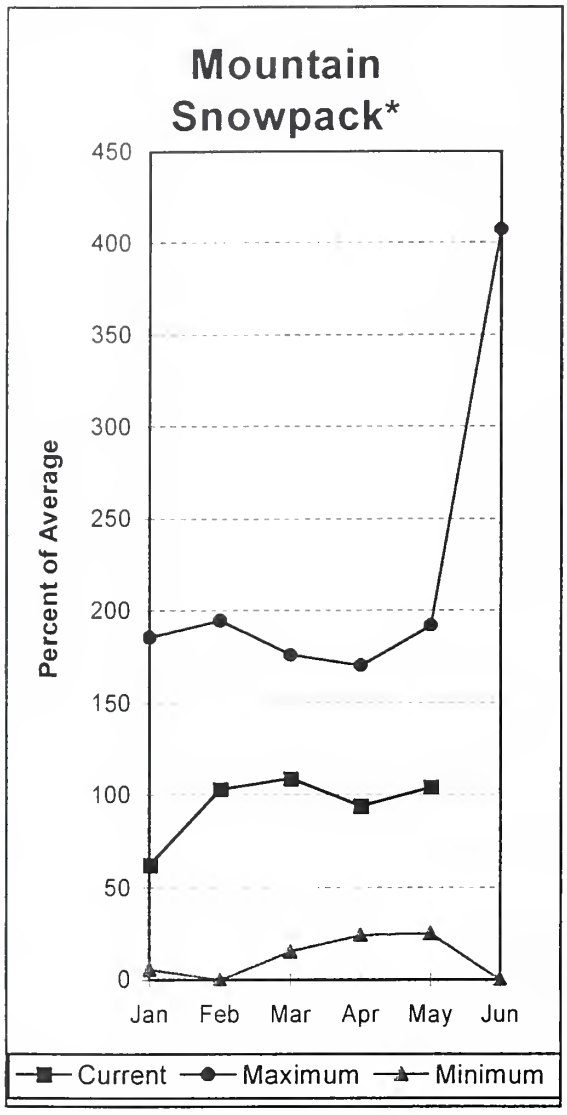
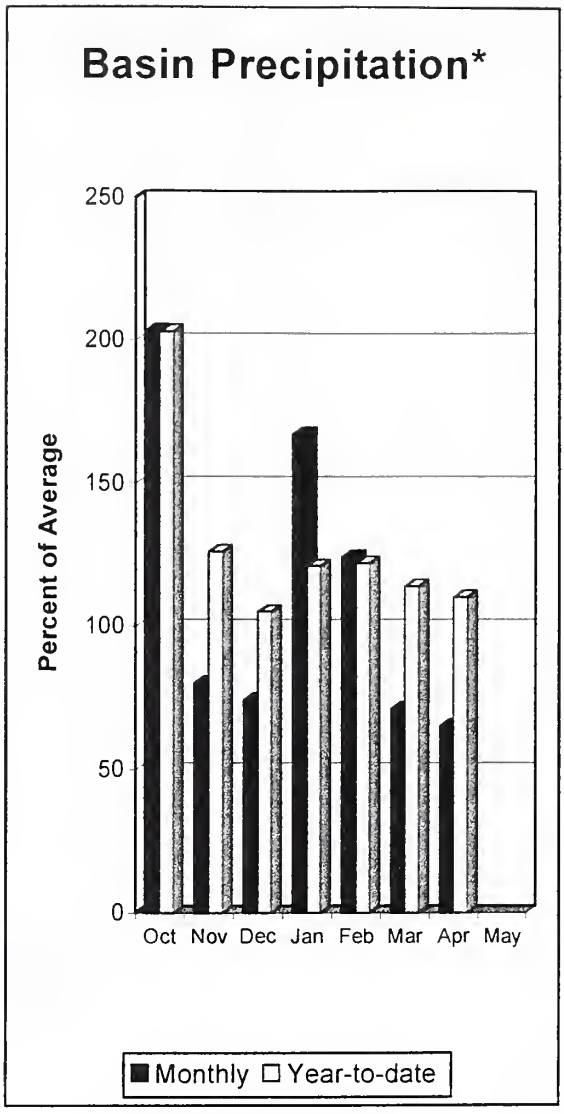


Olympic Peninsula River Basins





*Based on selected stations

May forecasts of runoff for streamflow in the Dungeness River Basin are 97% of average and 94% of average for the Elwha River. The Big Quilcene and Wynoochee rivers can expect near to above average runoff this summer. April precipitation was only 65% of average. Precipitation accumulated at 110% of average for the water year. April precipitation at Quillayute was 3.15 inches. The thirty-year average for May 1 is 7.15 inches. May 1 snow cover in the Olympic Basin was at 104% of average. The Mount Crag SNOTEL near Quilcene had 35.2 inches of snow-water-equivalent on May 1. Average for this site is 22.4 inches. Temperatures were near average for the month.

For more information contact your local Natural Resources Conservation Service office.

Streamflow Forecasts - May 1, 1998

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	50% (Most Probable) (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
DUNGENESS near Sequim	MAY-SEP	116	124	130	97	136	144	134
	MAY-JUL	93	99	103	96	107	113	107
	MAY-JUN	63	70	75	98	79	86	76
ELWHA near Port Angeles	MAY-SEP	363	390	408	94	426	453	434
	MAY-JUL	291	313	327	94	341	363	348

OLYMPIC PENINSULA RIVER BASINS
Reservoir Storage (1000 AF) - End of April

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

OLYMPIC PENINSULA RIVER BASINS
Watershed Snowpack Analysis - May 1, 1998

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
ELWHA RIVER	1	64	69
MORSE CREEK	1	77	97
DUNGENESS RIVER	1	128	94
QUILCENE RIVER	1	124	157
WYNOOCHEE RIVER	0	0	0

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

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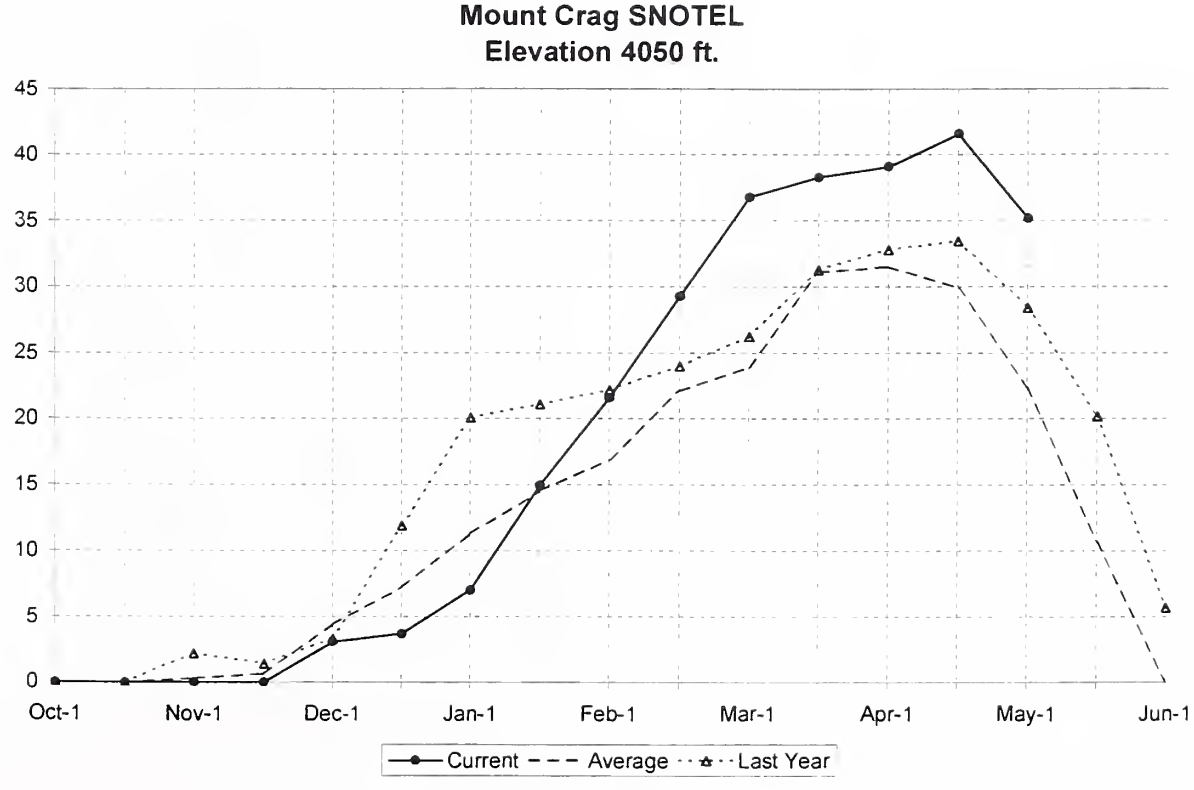

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Helpful Internet Addresses

NRCS Snow Survey and Climate Services Homepages

Washington:
http://wcp.wsu.edu/nrcs/CoopSnoSrvy.htm

Oregon:
http://crystal.or.nrcs.usda.gov/snowsurveys/

Idaho:
http://id.nrcs.usda.gov/snow/snow.htm

National Water and Climate Center (NWCC):
http://www.wcc.nrcs.usda.gov/

NWCC Anonymous FTP Server:
ftp.wcc.nrcs.usda.gov

USDA-NRCS Agency Homepages

Washington:
http://wcp.wsu.edu/nrcs/

NRCS National:
http://www.ftw.nrcs.usda.gov/

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The Following Organizations Cooperate with the Natural Resources Conservation Service in Snow Survey Work*:

Canada	Ministry of the Environment Investigations Branch, Victoria, British Columbia
State	Washington State Department of Ecology Washington State Department of Natural Resources
Federal	Department of the Army Corps of Engineers U.S. Department of Agriculture Forest Service U.S. Department of Commerce NOAA, National Weather Service U.S. Department of Interior Bonneville Power Administration Bureau of Reclamation Geological Survey National Park Service Bureau of Indian Affairs
Local	City of Tacoma City of Seattle Chelan County P.U.D. Pacific Power and Light Company Puget Sound Power and Light Company Washington Water Power Company Snohomish County P.U.D. Colville Confederated Tribes Spokane County Yakama Indian Nation Whatcom County Pierce County
Private	Okanogan Irrigation District Wenatchee Heights Irrigation District Newman Lake Homeowners Association Whitestone Reclamation District

*Other organizations and individuals furnish valuable information for the snow survey reports. Their cooperation is gratefully acknowledged.

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Washington Basin Outlook Report

Natural Resources Conservation Service
Spokane, WA